The Builder.

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Hoxton and its History.

MONGST the numerous districts of London, the names of which commence with the aspirate so much neglected by the uneducated Cockney, such as Hampstead, Highgate, Holloway, Hornsey, Haggerstone, Highbury, Hackney, Homerton, &c., Hoxton is not the least interesting. It has a history to tell to all who are ready to listen to its tale. Those who feel inclined to explore the Liberty of Hoxton will find that its limits are now quite unmarked, and that there is nothing to show that it was once a place apart; but in the days when London was a walled city, an inhabitant standing by old Moor-gate and looking over the wide expanse of morass to the north might have distinguished in the distance one or two little villages dotted about the space beyond it. One of these was Hoxton. Should the visitor of to-day come out from the West of London he will proceed after passing the Charterhouse along Old-street, St. Luke's, until he arrives at Pitfield-street; if from the East a turn out of Shoreditch and a two minutes' walk will take him into the chief street of the place; and if from the North he can come from Islington down the New North-road. He will find little to remind him of the once famous gardens, the handsome trees and grand old houses for which Hoxton was formerly noted. There are still a few trees left, but they do not look as if they had a healthy air to breathe, and the few old-fashioned mansions that remain are in a greatly decayed or patched-up condition.

Hoxton is of considerable antiquity, and is mentioned in "Domesday Book" as Hocheston. During the eight centuries that have passed since then it has gone through many stages, and after enjoying a separate existence for a long term of years, it has at last been swallowed up by London's ever-advancing growth. We must imagine it as having been originally a small village surrounded by fields and entirely cut off from London by the great marsh of Moorfields outside the old City walls. Let us now look at it during the last four centuries of its existence. In 1415 Thomas Falconer, then Lord Mayor of London, caused a breach to be made in the walls next the moor, and built a postern, called Moor-gate, through which the citizens were enabled to reach the rural villages of Isledon (Islington), Clerkenwell, and Hogsden (Hoxton), by making use of the causeways which were laid across the moor; and this state of things lasted till 1527, when Moorfields were at last drained. There is much to be said of the village in the sixteenth century, when it still remained in the isolated condition we have just described. In Van der Wyngrerde's "View of London," in the Sutherland collection (1543), it is marked as a small speck to the north of London. The archers of Finsbury-fields were formerly of great fame, and Henry VIII. gave honorary titles to the chiefs; thus the Captain was Duke of Shoreditch, and the Marquis of Hogsden was one of his principal officers. The following is a note of one of the archery displays on September 17, 1583:—"The train passed to Shoreditch Church, and then turned into Hogsdon-fields, in a fair large green pasture, of goodly compass, where a tent was set up for the duke and the chief citizens, where they might sit to see the shooters appointed to shoot at the butt now set up for the same." During the reign of Elizabeth, and in the years 1584 and 1585, search was made in Hoggesden, by order of her Majesty and the council, for the apprehension of certain priests and papists. Popish relics and papistical books were found in the houses of Sir Thomas Tresham and others, and priests and Jesuits were found in Mr. Wylford's house. In 1588 Sir Thomas and his fellow prisoners obtained their liberty from confinement in the palace of the Bishop of Ely, and his letter, thanking Burghley for their freedom, is preserved among the State Papers.

At the end of the sixteenth century Hoxton had grown considerably, and it is described by Stow in 1598 as "a large street with houses on both sides." It was, however, still surrounded by fields, and in those fields Ben Jonson killed Gabriel Spenser, a player in Henslowe's company of actors, in a duel in September, 1598. Jonson told Drummond, of Hawthornden, that, "being appealed to the fields he had killed his adversary, who had hurt him in the arm, and whose sword was 10 in. longer than his, for which he was imprisoned and almost at the gallows," and added, "in the time of his close imprisonment, under Queen Elizabeth, his judges could get nothing of him to all their demands but 'Ay' and 'No.' They placed two damned villains to catch advantage of him, with him; but he was advertised by his keeper." Ben has several references to Hoxton in his plays; and in "Every Man in his Humour" we learn that Master Stephen dwells at Hogsden, but despises "the archers of Finsbury, and the citizens that come a-ducking to Islington ponds."

We will now pass on to the seventeenth century. Hoxton had then become a place of holiday resort for Londoners, and, although of easy access, it was sufficiently in the country to be a desirable place for the citizens to breathe the fresh breezes from the north, and to see some rural sights. In Newcourt's "Map of London," engraved by Faithorne (1658), Golden-lane, with its gardens in rear of the houses, is the most northern point built upon, and Hoxton, therefore, is not included in the map. Withers, in his "Britain's Remembrancer" (1628), writes,—

> "Hogsdone, Islington, and Tothnam Court,
> For cakes and creame had then no small resort."

These dainties appear to have been supplied to visitors at a place called Pimlico, noted for its ale, and frequently mentioned in the literature of the time. In the "City Match" (1639), Plotwell says,—

> "We have brought you
> A gentleman of valour, who has born
> In Moorfields often: marry, it has been
> To 'squire his sisters and demolish custards
> At Pimlico."

This name still remains in Pimlico-walk, a narrow lane out of Hoxton-street.

Charles I., on his return from Scotland in 1641, crossed the fields from Newington to Hoxton. During the eighteenth century Hoxton still retained its character as a pleasant place; and in Rocque's map (1746) it is shown as a countrified spot, with Finsbury-fields to the east and Kingsland to the north, the houses having gardens looking into the country.

Hoxton was a favoured home of some of the most noted gardeners in the seventeenth and eighteenth centuries. One of the earliest of these was Gourle, who flourished in the reign of Charles II., and whose name has come down to us in an anagrammatic form attached to the nectarine he successfully raised, viz., the *Elrouge*. George Ricketts, Pearson, and William Darby are all three mentioned in Gibson's curious account of gardens near London, in December, 1691 (Archæologia, vol. xii., pp. 190—192). Ricketts cultivated more than 190 kinds of tulips, and he possessed the richest and most complete collection of flower-bearing trees and shrubs in the kingdom; Pearson had the best assortment of anemones about London, and sold "them only to gentlemen"; and Darby was known as one of the first in England to cultivate exotic plants. He was succeeded by John Cowell, in whose garden flourished the Cereus and the Glastonbury thorn. A great American aloe was bought by Darby when it was twenty years old, and it remained in his garden for forty years, after which it came into Cowell's possession. When it was seventy-two years old it began to open its crown for flowering, and in June, 1729, it flowered magnificently. Large numbers of visitors were drawn to the gardens to see this curiosity. Another noted Hoxton gardener was Benedict Whitmell; but the most distinguished of the fraternity was Thomas Fairchild, who, by the judicious bequest of the small sum of 25*l.*, has succeeded in preventing his name from ever being forgotten. Fairchild united a love of science with the practice of his art, and contributed a paper on the motion of sap in plants to the Royal Society, which was printed in the "Philosophical Transactions" (vol. xxxiii., 1724). His grounds were afterwards known as Selby's Gardens, and extended from the west end of Ivy-lane to the New North-road. Here he cultivated a vineyard as late as 1722, which is said to have been one of the last in England. Fairchild by his will, dated February 21st, 1728, and proved in the Prerogative Court, October 13th, 1729, "gave and bequeathed to the trustees of the charity children of Hoxton, and their successors, and the churchwardens of the parish of St. Leonard, Shoreditch, and their successors, the sum of 25*l.*, to be by them placed out at interest for the payment of 20*s.* annually, for ever, for the preaching of a sermon in the said Church of St. Leonard, Shoreditch, by the lecturer of the said parish, or such other person as the said trustees and churchwardens and their successors should think proper, in the afternoon of the Tuesday in every Whitsun week in each year, on the subjects following, viz., the wonderful works of God in the Creation, or on the certainty of the Resurrection of the Dead, proved by the certain changes of the animal and vegetable parts of the creation." This sum was considered so inadequate for the purpose, that a subscription was opened, with the intention of raising it to 100*l.* To this subscription Sir Hans Sloane, Lord Charles Cavendish, and other celebrated men gave their guineas; but only 45*l.* 3*s.* were collected by this means, and afterwards Dr. Denne, vicar of Shoreditch, a valuable man, who rebuilt the church and carefully looked after the benefactions of the parish, added 25*l.* 17*s.* out of the money he had received for preaching the lecture for fifteen years. Archdeacon Denne and Cornelius Wittenoom, the trustees, were desirous of transferring their trust to the Royal Society, and in June, 1746, the Society having accepted it, an elaborately-worded deed was approved by the Council, but the actual transfer did not take place until after the death of Archdeacon Denne, in 1767. Among the noted men who have delivered the lecture may be mentioned Dr. Stukeley; the Rev. William Jones, of Nayland; the Rev. Samuel Ayscough; and Dr. Wilberforce, when Bishop of Oxford. In 1750, Stukeley

made a note in his journal of a visit to hear the lecture; and as the passage gives us a picture of the state of the neighbourhood of Hoxton at that date, we will quote it here:—"I went with Mr. Folkes and other fellows to Shoreditch, to hear Dr. Denne preach Fairchild's sermon on the Beautys of the Vegetable World. We were entertained by Mr. Whetman, the vinegar merchant, at his elegant house by Moorfields, a pleasant place, encompass'd with gardens, well stored with all sorts of curious flowers and shrubs, where we spent the day very agreeably, enjoying all the pleasures of the country in town, with the addition of philosophical company."

The late Charles Babbage, in his "Decline of Science in England," suggested some impracticable alterations in the carrying out of the founder's intentions, but a general desire was long felt in the Society to get rid of the Trust. One of the stipulations in Fairchild's will was that "in case default be made in preaching the said sermon at the time aforesaid, then his will was that the sum of twenty-five pounds should be forfeited to the churchwardens of the Parish of St. Giles, Cripplegate, London, to be by them and their successors placed out at interest for the preaching of the said annual sermon in the Parish Church of St. Giles, Cripplegate." Had the Society, however, allowed the trust to lapse, the only sum to be handed over to the churchwardens of St. Giles's, Cripplegate, would have been the original twenty-five pounds, and with the remaining amount they would still have been saddled. A way was at last found out of the difficulty, and after some correspondence between the Secretary of the Charity Commission and the Secretary of the Royal Society, the trust was handed over to the Charity Commissioners in 1873, and the Bishop of London for the time being was appointed Trustee. In 1854 the 100*l.* South Sea Annuities paying 3 per cent. was converted into 110*l.* New 2½ per Cent. Stock.

Although we have but little space left for the history of some of the once celebrated houses of Hoxton, we must not pass them entirely by without notice. Balmes House, originally built in 1540 was once surrounded entirely by a moat. St. John's House, also known as the White House, Hoxton, Old Town, was long supposed to have been built early in the reign of James I., by Oliver, third Lord St. John, of Bletsoe, in the county of Bedford, who died here in 1618, because the vane that once stood on the top of the building was perforated with the inscription, $\frac{\text{St.}}{\text{O.}}$ $\frac{\text{J.}}{\text{1610.}}$ It has, however, been contended by some that the house was only thoroughly repaired in 1610, and had been erected about a century previously. The St. Johns were the great people of the neighbourhood, and many of them were buried in the church of St. Leonard, Shoreditch. Soon after 1700 the estate passed by purchase from the St. Johns to the Tillard family, and the house was kept from 1740 to 1750 as a boarding-school by Mr. Baddeley, father of George Baddeley, D.D. It was afterwards successively occupied by Messrs. Barnes, Smith, Burrows, and Tipple, the latter having used it as an asylum for paupers farmed out by various London parishes. The garden at the back of the house at one time extended to the Kingsland-road. Hoxton House was rebuilt in 1818 and is now occupied by a Lunatic Asylum. A very noticeable feature of Hoxton is the large number of almshouses that have at different times been founded in its immediate neighbourhood. The most important of these is Aske's Hospital in Pitfield-street, which was erected by the Haberhashers' Company in 1692, pursuant to the will of Robert Aske, who left 30,000*l.* to that Company for building and endowing a hospital for the relief of 20 of its poor members, and for the education of 20 boys, sons of decayed freemen of the company. The once celebrated Arthur Bedford was one of the chaplains. The architect was that universal genius Dr. Robert Hooke, who was blamed for exceeding the sum allowed and thus lessening the revenue of the hospital; but he contended that this was not his fault. He said that it was caused by additions and alterations of the first design, and also because he did not himself procure or agree with the workmen. The building was pulled down and rebuilt early in the present century. Hoxton-square was once remarkable as the residence of many eminent Nonconformist divines, and it was probably a pleasant place when country fields could be seen from the back windows. Charles-square was built in 1684 by a Mr. Charles, and was known for many years as the New Square. A distinguished resident was Cowper's friend, the Rev. John Newton, who was rector of St. Mary Woolnoth, Lombard-street, for twenty-eight years, and died in 1807.

Hoxton was once noted for Balsamic Wells, and a book was written upon them. Sir Philip Skippon, writing to Ray (December 13, 1667), refers to "the sweet-smelling earth found in Captain Massey's garden, at Hogsden," and eighteen years afterwards Sir Hans Sloane, in a letter to Ray (November 10, 1685), gives a full account of the earth, and an analysis of the water found "near the new square at Hockesdon."

Whatever charms Hoxton may once have possessed, they are all gone now, and yet not many months ago a London merchant purchased ground there, and built himself a house, which was finished, and fitted up with all the thoroughness that taste and luxury could suggest. A conservatory was placed between the kitchen and the dining-room, and a tramway laid down, in order that the dinner might be wheeled from the place where it was cooked to the place where it was eaten without any delay. The house was hardly finished when the merchant died, and his family, preferring another neighbourhood sold it. Hoxton has still some claim to notice as possessing a well-conducted theatre for the people. We once found ourselves spectators of a pantomime at the Britannia Theatre, but the audience were better worth looking at than the mimic life upon the stage.

THE FRENCH GALLERY.

IT was a debt worth acknowledgment when private enterprise enabled the untravelled Londoner to make acquaintance with some of the best and most celebrated pictures of the world's most recent production — and many of the choicest works of French and Belgian painters have passed a summer-time in the apartment 120, Pall Mall, to which years of custom have given the lasting designation of "the French Gallery,"—for beyond the pleasure and instruction ever derivable from contemplating such masterpieces, it seemed a promise that frequent opportunity of studying them would surely benefit those amongst us who were cultivating taste and knowledge for the practice of art; that our school would be benefited by constant association with the works of professors versed in classic knowledge of what it must appear their nature makes them more susceptible of acquiring than capable of imparting.

The question now is, whether foreign painters have not become more like our own than *vice versâ*. There may be many reasons why there has been of late so little change in the succeeding Exhibitions of Continental contemporary art, and one may be that the increasing demand for pretty pleasant brilliant specimens of it to adorn drawing-room and dining-room walls very much regulates the supply. There is no falling off in any respect of these recommendations. The "Pretty Reflections" (2), by M. G. de Jonghe, with another well-to-do young lady, not quite so well painted, if as well dressed; "The Lap Dog" (34), by the same; "Chez le Cordonnier" (36), by M. V. Cassobianchi; "In my Garden" (46) and "The Morning Walk" (62), two very choice little bits, by M. G. Boldini; "The Letter Casket" (146), that gives nominal motive for another fair one to stand in such splendidly expensive white satin, that might stand alone, by M. H. Scholten; and "The Jewel Cabinet" (155), the contents of which are being exposed in a ladylike manner by a tall slender *blonde* to an equally ladylike and appreciative *brunette*, by M. F. Verlias, head a list of such charming things, as it is quite easy to anticipate finding amongst the usual 200 and odd items that annually re-awaken interest and admiration for Mr. Wallis's collection.

The judgment and care with which these collections are brought together, give very good evidence that they do more than fairly represent contemporary foreign art, and if there be any object of comparison with the widely-spread and rather wildly-growing show of art we sometimes make in Britain, similar pains would insure similar results, always so long as Meissonier lives to paint as he paints now, and Gérôme reminds of wonderful dramatic and manipulative skill by the least assertion of it; and Jules Breton, with others, are left to tell that the genius of the French school is a tradition strong enough to be kept alive in choice costume, attitude, and *bric-à-brac*. Conviction strengthens, year by year, that in the want of purpose, inventiveness, or any meaning beyond the mere intention of displaying the hand's skill, the apprehension of form, and sense for colour, for the sake of vaunt only, the total subservience of individual mind to common matter, the vain show of a worthless glory, a deluge is promised to the painter. If put to the vote, his own countrymen would return M. Meissonier as their greatest artist of to-day,—and M. Meissonier has a great deal to answer for: inimitable as he is, no one was ever more imitated. If perfect success attending the completion of every intention of the painter, including the one of making it quite palpable to all what the intention is, may be taken for consummate performance, Meissonier is the greatest artist living. He attempts to teach no lesson: with laconic terseness,—his pencil is his voice,—he gives a text with such inflexions that idssertation follows of its own accord. "The Sign Painter" (60), who before giving the finishing touches to a figure of Bacchus bestriding a cask, and is obsequiously asking the opinion of a connoisseur well calculated to give one if it be only by his sympathy with the heathen god, knows very well it will be a favourable one or he would not ask it. Some physical resemblance between his own bared chest and that which he has depicted for Bacchus would suggest more faith in nature than dependence on what is Greek; but the sagacious critic is too far gone in libation to do more than indicate he has an opinion, if he could only state it; he does not feel sure of coherence though, so he bites a straw and screws his eyes to critical focus, thrusts his hands into his breeches pockets, and with his legs well fixed to stop sway, follows the bent of art critics generally, who, when they do not know what to say, give room for an impression that they could say a great deal if they only chose to speak. It would seem to be next to impossibility to beat the workmanship throughout this picture, but thus is its lesser merit by the side of the character and vitality of the two figures that warm the very clothes they wear.

The "Guard-room" (63) is not the best nor the least perfect of many similar scenes that at once recur to memory whenever this master's name is mentioned; M. J. L. Gérôme's moody Eastern potentate, "Botzaris" (44), will also recall many a triumph of narrative value over equally well represented velvet, chased arms and elaborated properties, as this shows; but very few would identify the clever carelessness that appears to leave whatever result is attained to mere accident, in such work as fills "An Idle Hour" (12), with the exquisite finish and refinement of taste by which M. Alfred Stevens used to exalt ordinary episodes of everyday life.

The always-delightful children that Mons. Edouard Frere selects as models for his method of poetising and making picturesque the even tenour of peasant-boy existence, are missed from the number of examples provided by those who would emulate him. "The Girls' School" (84), by Mr. E. Duverger, is poor compensation for what would have been so much better done by M. E. Frere, and the amount of all that may be seen here to give room for a supposition that his place might be supplied, only serves to make his absence the more remarkable.

M. P. Billet is a poet-painter. There is an indescribable grace about his homely damsels "Grass-cutting," under a dappled sky, that generalises open-air effect, and leaves little difference between light and shadow, that would raise even more homeliness until it became singularly beautiful. One of the most difficult of natural effects is here wonderfully well fixed in paint, and with the more credit to the painter's observation, since it belongs to those things that must be learnt, by reason that it could never be made stay for copy.

M. A. Wahlberg is entitled even in greater degree to this rarely-earned praise: the close watchfulness and keen apprehension of light and shadow effects that pass and vary whilst they are watched, belong to the highest qualities that fit a man to excel in art. "The Port of Waxholm, near Stockholm" (148), might class with the best of its kind, as a magnificent example to prove there must be much that is innate in addition to the more that may be learnt and acquired to constitute a great painter.

Those who came most nearly after Raffaelle might owe all they knew and did from teaching; whilst Rembrandt, Constable, Reynolds, Turner, and some few others, were their own and only real masters, even if they did not know it.

In art, catholicism and dissent have not so many differences as degrees, and there never can be a great artist, however intense his desire is to learn everything that can be taught, who will not take room to find out much more for himself.

A strict Protestant might lift his hat to M. A. E. Hébert's "Madonna" (8), the representation is so simple, and so devoid of anything like a sentimentality such as spoils M. J. Cermak's "Episode of the War in Montenegro" (1862), wherein some Montenegrine women, when carrying cartridges to the soldiers, meet a wounded Woivode, and are demonstrative of the most frantic grief at the practical lesson on the purpose of making and carrying, and firing ball-cartridge; however, the incident may be historical, it is only one more unnecessary illustration of woman's perfection—her perfect inconsistency. There is sound workmanship to condone any such shortcoming as this, however, in Mr. Cermak's clever picture, which is almost singular as an example of dignified application of good drawing and general artistic skill.

THE PROPOSED CITY MARKET COMPETITION.

THE designs submitted for the proposed market in Farringdon-street, in reply to premiums offered by the Corporation of London, and which are now hanging on screens within a temporary enclosure at the east end of the Guildhall, give us no pleasure. When the competition was first announced, it was pointed out in our pages that it could scarcely result satisfactorily. Architects of position, it was said, knowing that the work must almost necessarily go ultimately into the hands of the City architect, so that nothing was to be looked for but the bare premiums, could scarcely be expected to compete in any numbers. And this we are forced to suppose has been verified by the result. The majority of the designs submitted are utterly valueless, many of them ridiculous. The least cultivated observer will say *proh pudor!* to "Prudentia," and question the clear-headedness of the competitor who signs his designs "Practical": "Validus" is altogether invalid, and "Post Mortem" requires no lengthened inquest to be put out of court. Some of even the best of the works have features which must inevitably lead to their rejection: "Domine dirige Nos" has a turreted tower, that suggests Scotland in the Middle Ages, when the market had to be defended against an occasional raid; and "Anchor," praiseworthy in some respects, has made a monument instead of a market. The corporation do not want a monument,—they do not want domes or towers. What is needed is a good, light, well-ventilated market; handsome, of course, or it would not be a fitting work for the Corporation of London, but still a market, and nothing more. One great question to be decided is, shall the market be in two stories or one? The difference in the levels on the east and west sides of the ground suggests two, and this arrangement is proposed by several of the competitors. We are strongly disposed, however, to think that to adopt it, except in a very limited degree, would be a mistake. It certainly should not be done without the fullest consideration on the part of the advisers of the Corporation. The efficiency or otherwise of the market depends wholly on considerations of this kind, to be settled only by an architect who can go minutely into them on the spot with all the required special knowledge and local information. If the Corporation had offered their premiums for sketches, suggestions, and ideas, the waste of time now apparent would have been saved. One of the competitors, and by no means the least praiseworthy as a draughtsman ("Westminster"), has sent no fewer than twenty-four large frames of drawings, including minute details of ironwork and fittings, all of course utterly useless if the initial idea of the design be rejected.

The Building Act of 1844.—In the Commons on Monday, Mr. Locke asked the Home Secretary whether, in view of the unrepealed sections of the Building Act of 1844 (as to slaughter-houses) coming into operation in August next, the Government proposed to legislate on the subject according to the recommendations contained in the report of the Select Committee made last year. Mr. Cross said it was the wish of the Government to legislate upon the subject during the present session in the spirit generally of the recommendations of the Committee.

ANCIENT ART-WORK IN METAL.

IN our recent observations on the subject of ancient art, we arrived at the subject of metal-work. The field of research, as to this branch of the workman's craft, is wide, and very far from being exhausted. The discoveries in the Troad, chronicled in our pages, not only offered a proof of the costly nature of the ancient *vaisselle*, but afford specimens of execution, from the minute study of which, information, as regards the history of the goldsmith's art may be derived.

Notwithstanding the goodness of workmanship (apart from design) which characterises the work of our best English goldsmiths and silversmiths at the present day, there is good reason for coming to the conclusion that they might yet learn much from a fuller acquaintance with the labours of their predecessors. There is evidence of a "lost word" in the craft; of the possession, by the ancient craftsman, of secrets which, if not entirely lost, are yet very generally unknown. One reason of this appears to be the fact, that when the enormous treasures of the temples and palaces of the ancient world were pillaged and destroyed by various hordes of barbarian conquerors, not only were the ancient services of gold melted into money, but they have never since been replaced. The very word "gold plate" is an illustration of our meaning. The discovery of the fact that if a strip of gold was welded on to a bar of silver, or a strip of silver on to a bar of copper, the compound structure might be rolled or beaten to a great degree of tenuity, without destroying the continuity of the more precious surface, has allowed of the production of services for the table which, while made of silver, have the appearance and lustre of gold. Such is the magnificent service made for King George IV., which was recently displayed in the Royal Banquet at Windsor. Articles of gold for chamber use, as distinguished from personal ornaments, are now extremely rare. The Ampulla or Golden Dove, which is used to contain the chrism, or anointing oil, for the Coronation of an English Sovereign, is, so far as we remember, the only article, in the Coronation Service of gold plate, which is made entirely of gold. In addition to the fact that a dish or goblet of gold would cost, for material alone, sixteen times as much as an equal weight of silver, the difference in the specific gravity of the two metals is such, that the golden article would only be about half the size of the silver one. Thus the disproportion in cost is more than thirty to one. And, for convenience of use, the weight of the silver article is every way preferable to that of the more costly metal. Indeed in this respect we think it highly probable that silver will hereafter be, to a great extent, superseded, for articles of domestic use, by the lighter metal aluminium; which possesses a lustre similar to that of silver, and is far less subject to oxidation.

The ancient craft, therefore, of the goldsmith, is now represented by the two existing crafts of the silvermith and the jeweller. The former executes all those objects of ornamental vesselry which, when gold was more common, as measured by its relation to silver, than at present, were wrought in that noble metal. The latter works, for the most part, in an alloy of comparatively low value. The purity of gold is still denoted by the use of the term carat. This word, which like the Troy grain, and the Latin *siliqua*, is thought originally to have denoted a seed, or pod, taken for the unit of weight, appears to have been the basis of the ancient Chaldean system of weights. As a positive dimension, it is now only commonly used by the diamond merchant. Four diamond grains go to one diamond carat, which is the equivalent of 3·2 grains Troy. But the term is still employed to denote the purity of gold. Absolutely pure gold is said to be 24 carats fine. It is a curious fact that this weight of 24 carats, if taken as a positive quantity, of 76·8 grains Troy, is exactly the fifth part of the Sela, or silver unit, which was introduced into Palestine after the conquest of Babylon by the Persians. This coin was one-fifth part heavier than the shekel, the silver unit which prevailed from the earliest known times down to those of the Persian empire. And the Daric, or gold coin of the Persians, specimens of which exist in our museums, has a distinct relation of weight and of value to the the Sela of 384 Troy grains of silver.

In the English coinage, 22 grains of fine gold are mixed with 2 grains of fine copper, to form the standard, which is called 22 carats fine. This is represented by the decimal 0·9166. In the French coinage the gold is 0·90 fine. Ordinary jewellers' gold is of a lower purity. When it is of 15 carats fine, or fifteen parts of pure gold to nine parts of copper, it is now frequently stamped 15 c., to denote the fact. Gold of 18 carats fine, or 0·75, is unusually pure for jewellers' work. In Portugal, however, gold of a much greater purity is employed by the goldsmiths. In Italy, on the contrary large quantities of rings, chains, and other ornaments with which the women of the lower classes are fond of loading their fingers and necks, are made of gold as impure as 5 or 6 carats,—that is to say, that the alloy contains only five or six parts of gold to nineteen or eighteen of copper.

The use of silver as an alloy, instead of copper, gives that pale colour which characterises our old guinea-pieces, as they were struck, down to 1734. The question of colour is rather one of taste than of actual value. But if coin be reckoned according to its gold-weight alone, and at one time silver, and at another copper, be used as an alloy, it may pay to melt down the former mixture, in order to extract the silver; and much old gold has, it is said, been thus destroyed.

In gold chains, or other articles of personal wear, the owner will sometimes have the articles recoloured, as it is called. The method employed involves subjecting the object to heat adequate to burn out the particles of copper on the surface. The article loses appreciably in weight by the process. The brilliancy of appearance, which has been acquired by the "colouring," is soon lost, and the object is permanently deteriorated.

A cubic foot of gold weighs from 1,186 to 1,224 pounds avoirdupois, or from 19 to 19·6 times the weight of an equal bulk of water. This is expressed, as our readers are aware, by saying that the specific gravity of gold varies from 19 to 19·6. The specific gravity of silver is 10·5; that of copper 8·6, when cast, 8·8, in sheet, and 8·9, when hammered. Thus the purity of any object made of gold can be ascertained by weighing it, first in the air, and then in the water. In the latter case, the object displaces a bulk of water exactly equal to its own bulk. It loses, in consequence, a weight equal to that of its own bulk of water. A means of comparison is thus established, which only fails in exactitude from the want of knowledge as to what is the nature of the baser metal used in alloy. This beautiful and simple check upon the purity of gold, when worked up by the goldsmith, was the discovery, as is well known, of the great mathematician, Archimedes, of Syracuse, who died B.C. 212. The legend, which has all the stamp of truth, is to the effect that it was the displacement of the water in a bath by his own person that originated the train of thought which led that great engineer to the establishment of the doctrine of specific gravity. He is said to have rushed home from the bath, without waiting to put on his garments, exclaiming EYPHKA—"I have found it!" His mind had been previously much exercised by the inquiry made of him, by Hiero, tyrant of Syracuse, as to the purity of the gold employed in making a crown, about which some suspicion had arisen with regard to the integrity of the goldsmith. This ancient classical tale, with which many of us are perfectly familiar, is of interest in this inquiry, as it proves that, at a period when (as we shall show) the art of the goldsmiths had attained great excellence, what until then was a mystery of the craft was penetrated by the analysis of pure science.

Gold is now employed as the standard of value in Great Britain; and is increasingly so employed throughout the world. It must be borne in mind that a standard is a unit, arbitrarily assumed, by which dimensions are compared; or in terms of which they are stated. Thus, a Troy grain is a unit of weight, and when we make that statement we have stated an ultimate fact. If anyone asks how much a Troy grain weighs, it is only by some very circuitous and difficult process that any exact answer can be given. And that answer will only be arrived at by some comparison with other dimensions. In the same way, the foot is our unit of length, and we could only recover the exact length of the foot, if it were lost, by its recorded relation to the length of the pendulum which vibrates seconds. In the same way, again, a sovereign (which retains the name of pound, given when the troy pound of silver was the unit of amount) is a stamped piece of gold, 22 carats fine, weighing 123·274 grains Troy. That is an ultimate fact, and questions of value become simple when it is thus regarded. A piece of metal of that weight and fineness is

a well-known, though arbitrarily fixed, unit of exchange.

In round numbers (which are generally the most useful) gold may be said to be worth twopence per grain. An ounce of standard gold is worth seventy-seven shillings and ninepence as bullion, and seventy-seven shillings and tenpence halfpenny as coin,—the odd three-halfpence being the sole charge made for assay and for mintage. At that rate, an ounce of pure gold is worth 84·82 shillings. We can thus readily ascertain the value of gold of any given degree of fineness. Eighteen-carat gold being worth 55·95 shillings per ounce; fifteen-carat gold being worth 50·89 shillings per ounce; and so on.

We have an account of a masterpiece of ancient goldsmiths' work, dating about half a century before the important discovery of the laws of specific gravity. It is given in the "Archæologiæ" of Josephus, book xii., chap. 11. A great amount of obscurity attends the passage; and as it has been rendered by Whiston—we cannot say into the English language, but into English words—it approaches what is commonly called gibberish. Even in the original Greek it is obscure. This arises from the remarkable fact, that the Jewish writers, almost or altogether without exception, labour under a marked disability to describe any visible object in intelligible words. They appear to be so accustomed to the hair-splitting of minute metaphysical subtleties as to be unable to call a spade a spade, or to describe its plain wooden handle and flat iron blade. In this instance also, as in many others, an unnecessary complication is involved by the introduction of dimensions that are mentioned in the Law, but which are inconsistent with the details given from other sources. Thus Josephus begins by describing the splendid piece of work in question as a golden table 32 in. long, 16 in. wide, and 24 in. high. But he then repeatedly speaks of it as triangular and equilateral, which is entirely inconsistent with these dimensions.

The probability is, that this table, which King Ptolemy II. had made, and sent as an offering to the Temple at Jerusalem, was actually a tripod. On one of the copper coins of Herod the Great, a tripod is represented, which very closely resembles one that is found on the silver coins of Crotona, of early date. The Mishna states (in the treatise on Offerings, chapter xi.) that a golden table stood in the porch of the Temple, on which the shew-bread was laid, when removed from the table before the Lord, within the Holy House. It is extremely probable that this second table may have been that offered by King Ptolemy. This may, therefore, have been actually a tripod, according to the details of the description; while the table in the Holy House, which (originally, at all events) was of wood, covered with gold, was of the oblong form denoted by the dimensions just given.

This magnificent piece of goldsmith's work, then, may be considered as having been 40 in. high; and,—if, indeed, it was a tripod,—of 18 in. or 20 in. on each side. It was entirely made of gold. Its flat surface was surrounded by a border, or crown, of 3 in. (accurately 2¾ in.) deep, wrought in arabesque, with a reed pattern at the angles. The table itself was chased, and precious stones were inlaid, both in the flat portion and in the supports and mouldings. Beneath the arabesque crown, there must have been something resembling the mouldings of an architectural cornice; and the author appears to endeavour to describe the now well-known "egg moulding," as interposed between the reeded members of the decoration. Beneath this, hung a sort of veil of golden foliage, either wrought in *repoussé*, or, as seems most in accordance with the account, actually beaten out in leaves, fruit, and tendrils, in a purely naturalistic style. "Under this pattern of eggs," says the old writer, "the artisans wrought a crown, composed of fruits of every sort, so close to nature that the grapes seemed to hang, the ears of corn to rise, the pomegranates to open." Precious stones, of the natural colours of each of the fruits, were set in the golden chalices, and the whole was united to the table.

Beneath this frieze of foliated work, which must have contained rubies for the pomegranates, emeralds or amethysts for the grapes, and topaz, for the wheat or barley, was another egg-moulding; and then another piece of reeded work. Thus, instead of a hollow tripod, such as is portrayed on the coins we have cited, or an ordinary table, standing on legs, we find that this masterpiece of the Alexandrian goldsmiths of the third century before Christ, was a prism, wrought with equal care and skill on each of its three vertical sides, and with the *corona* rising above the level surface which formed the upper part of the table. The little altar which Raffaelle has introduced into the cartoon of Paul and Barnabas at Lystra may be taken as a type of the design. A plain band, or fringe, of the same width as the *corona*, ran under the lower moulding. This rested on feet, each of which was wrought in the form of a lily, its petals spreading under the frieze of the table and showing—if we correctly read the word BLASTESIS—the stamens and pistil within the *corona*. Under each of these golden lilies, as the actual support of the whole superstructure, was a carbuncle, or large ruby; of course, as we now say "*en cabochon*." The word employed is *anthrax*, which is translated live coal; and Pliny derives the word carbuncle "*a similitudine ignis*." The most valuable of these gems are of the colour of pigeon's blood. Even when of a small size they fetched, in Imperial times, high prices. At the present time a ruby of the weight of 4 carats, that is to say, a little under 13 grains Troy, is worth 400*l*., and those above that weight have no determined price. The magnificence of this offering may be more fully appreciated by thus glancing at the value of but one of its constituent parts.

The thickness of the work is said to have been eight digits, which is equal to 5½ in. This must measure the relief, or projection from the back of the plates to the most prominent part of the enrichment of the edifice. It is consistent with the proportion of the relief of the tetradrachm, which we recently described, in which the fullest part of the work was double the thickness of the disc itself. A spray of ivy was wrought round the lower band of metal, mingled with a branch of the vine, of which the tendrils were so delicate that they are said to have been moved by the wind, and to have "seemed to be a phantasy of nature rather than a mimicry of art."

The chased surface of the table would seem to have been inlaid with gems set transparently; a rhomboidal space in the centre being filled by rock crystal, surrounded by amber, around which rubies and emeralds gleamed like stars. The sacerdotal writer lingers with delight over this glorious gift, the beauty of which he is so little able adequately to describe. He concludes by saying:—"Such was this gift of regal munificence, from the vast cost of the material, the variety of the ornamentation, and the mimicry of nature by the toreutic skill of the artizans, that, although it did not exceed the table before dedicated to the divine worship in size, yet in art, in novelty of work, and in brilliancy of effect, it was far better and more beautiful."

It is not the mere admiration of an Oriental semi-barbarian for a sacred object, that we have thus attempted to bring before our readers. As a priest, Josephus had no doubt seen the table in question. And he concluded the work we have quoted in the thirteenth year of Domitian (being the fifty-sixth of his own life), when he was not unacquainted with the full splendour of Imperial Rome. The table in question may, we think, be identified among the objects borne in triumph in the procession represented on the Arch of Titus. It was, no doubt, among the precious objects pillaged by Genseric, and carried by that barbarian to Carthage, on the sack of Rome in A.D. 455.

We may further assure ourselves of the excellence attained by the art-workmen of the time of Ptolemy II. by the comparison of the hieroglyphics cut under this dynasty, with those of more ancient date. In this branch of glyptic art, Egypt early attained a perfection of execution which may even now excite our admiration. We confess to wonder and amaze as to how these innumerable inscriptions were wrought in granite and in porphyry. There is a sharp, perpendicularly cut side, and a flat smooth bottom, to every character, in thousands of these inscriptions, which it would puzzle us now to produce. That time was utterly disregarded by the sculptors is, no doubt, one of the elements of the accuracy of their work. We see that condition illustrated by the Indian, and by the Chinese, work of to-day. But neither India nor China presents us with any counterpart of the true hieroglyph. The characters are perfectly conventionalised. They assumed, by the time that the pyramids were built, a type in which none but a very experienced and observant student of Egyptian antiquity can trace any variation, either as to form or as to mode of execution, for not only hundreds, but even thousands, of years. They seem to yield evidence of the application of an art, hardly to be distinguished from that of the cutter of gems in intaglio, to large surfaces, to statues, sphinxes, and walls of temples and of tombs. They wrought for an earthly eternity. Specimens of the personal ornaments wrought by the ancient goldsmiths, for kings and queens of old, whose tombs have been rifled by modern rapacity, heedless of the solemn curses denounced by the ancient ritual on such sacrilegious robbery. But none of our recent "finds" of ancient plate, in the Troad or elsewhere, has yet supplied anything approaching the magnificence of this offering of the Egyptian monarch; although there are cups and *craters* in the *Museo Borbonico*, wrought with vine-leaves and tendrils, that are not unworthy of the admiration, expressed, by the ancient writer, for the Golden Table of King Ptolemy.

THE TEMPLE RAILINGS ON THE EMBANKMENT.

THE lofty ornamental iron railings in front of the Temple Gardens, on the Thames Embankment, which have been in course of erection during the last few months, are now completed, the west gateway entrance, near the library of the Inner Temple, having been finished during the present week. The extreme length of the railings, from the east end, near Blackfriars Bridge, to the western boundary, is 980 ft. The Portland stone plinth or wall (resting upon a concrete bed), in which the railings are set, is 3 ft. in height, and the railings themselves 8 ft., the extreme height from the footpath level being thus 11 ft. The piers at the carriage and foot-way entrance-gates, at each end, which are in Portland stone, are elaborately carved. They are square in form, and 13 ft. in height. There are four of these piers at each entrance-gate. At the base of the angles of the piers there are carved acanthus leaves, whilst in the upper portion of the face there are ornamental incisions. About midway on the face of each pier there is a fluted band, whilst at each angle are columns, the lower portion of which, to the height of 15 in., is fluted. The piers terminate with an overhanging coping or capital, and each pier is surmounted by an ornamental cast-iron vase. The carriage entrance-gates are 10 ft. in width, and the footway gates on each side, 5 ft. wide. The gates at the east end are ornamented with the figures of Pegasus, as the emblem of the Middle Temple, whilst those at the west end display the Lamb and Flag, as the emblem of the Inner Temple. At the east end there is a boundary-wall, in Portland stone, 11 ft. high, surmounted by an ornamental balustrade. The spikes and some other portions of the railings are intended to be gilt, and otherwise ornamented. The whole of the works have been executed under the superintendence of Mr. Bazalgette, the engineer to the Metropolitan Board, by whom they were designed, having been approved of by the Benchers of the Temple before the commencement of the works. Mr. Gibbs, of Cheltenham, executed the whole of the iron-work belonging to the railings, the standards and the ornamental portion being of cast-iron, and the rails and spikes of wrought iron. The contractor for the masonry was Mr. Blake, of Devonshire-road, Hackney. The cost of the works is between 7,000*l*. and 8,000*l*.

DISCOVERY IN MOAB.

WE have been for some little time aware of the departure from Jerusalem of an entirely impartial and trustworthy expedition, bent on ascertaining something positive on the disputed point of the authenticity of the Moabite *terra-cotta*. We thought it advisable to wait for further intelligence before mentioning the fact, as it was the wish of the explorers themselves that their errand should, if possible, be unknown to the partisans interested on either side. A captain in our Royal Navy, two English clergymen, one German Lutheran clergyman, another German, and an Armenian, formed the party. They directed their course to a part of the country to the north of that in which the former exploration (in which Pastor Weser went with Mr. Shapira) were carried on. Doubts were thrown on the authenticity of the finds then made, on the score of the presence of a collector

with the party. Every care was, therefore, taken on this occasion that no possible element of doubt should be admissible as to the thoroughness of the investigation.

We hear by this mail of the return of the party. Full particulars will no doubt be authoritatively published, which we prefer not in any way to forestall. This much, however, we may state. They have brought back *idols* with them, but no inscriptions. This is a striking illustration of the wisdom of the old proverb, not to halloa until out of the wood. Forgeries are known to be indigenous productions of the soil of Palestine. The antiquity of that evil craft is probably greater, or, at all events, can be traced further back, in that locality, than in any other part of the world. Denarii of Trajan and of other emperors are familiar to collectors of coins, which have been restruck in Jewish dies. The work has been generally attributed to Jewish leaders, in times of war and revolt. But even if this be true, such a re-issue is very closely akin to forgery; and, it must be observed, that while these pieces, in spite of the antique type of the illegal die, are certainly not older than the emperors whose coins furnish their material, there is nothing whatever to show how lately the second impression may have been made on them. Fully aware of the activity of the Chinese kind of industry in Palestine, we have yet all along pointed out the essential difference between forgery and creation. It now seems to be established, by entirely independent testimony, that these quaint and often hideous figures are veritable relics of the ancient idolatry denounced in the Bible, and of which much detail is given in the Talmud. That no fringe of fictitious objects has been appended to this ancient web, we are not at all prepared to argue. But that the matter was not one to be treated with contempt either when it was brought to the attention of English inquirers, or after the main collection had been secured for Berlin, we have all along urged. The intelligence now received shows that, in this, we were thoroughly right. We may anticipate some rather lively letters from Jerusalem, and, perhaps from Berlin.

THE BRITISH MUSEUM AND THE LATE MR. EMANUEL DEUTSCH.

THE April number of the *Contemporary Review* includes a memorial of the late Emanuel Deutsch, by the Rev. H. R. Haweis,—a sad and touching story, not uninstructive. Mr. Deutsch, an officer in the British Museum, whose great attainments were little known beyond a circle of friends, awoke one morning in 1867, and found himself famous as the author of the now well-known article in the *Quarterly* on the Talmud. This article, as we are here told, which was but a fragment of an intended colossal work, has been translated into French, German, Italian, Dutch, Russian, Danish, Swedish, and Icelandic, and made the author known throughout Europe. Three years afterwards a fatal disease manifested itself, and after another three years of fearful suffering he died amongst strangers in Alexandria.*

In the course of the memorial Mr. Haweis makes some remarkable statements as to the treatment Mr. Deutsch received from his superiors in Great Russell-street. The writer says:—

"He complained bitterly, like many others, of the ventilation and heating of the British Museum. One day every one was oppressed with the closeness and heat; the next every one was shivering with cold. He complained that he was kept needlessly standing in draughty passages; was refused the use of a screen where he sat all day in a draught; suffered from cold feet, his mat having been removed for several days. The books it was his speciality to catalogue were taken from him, and hack work, well paid for as he would say at 40*l.* a year (his own salary was 300*l.*), was given him to do; indeed, he said that an attempt had been made to take him from his place and set him to work with clerks of an inferior official grade. At this he rebelled successfully. But after all, was not Mr. Deutsch bound to do as he was bid, and was it the business of the authorities to attend to his comfort more than to that of any one else?"

* Up to the last he appears to have laboured on, and not very long before his death we received a letter from him, seeking some information as to masons' marks, a subject for investigation which he regarded as of more importance than some persons, of not greater ability, are willing to attack to it.

Mr. Haweis, however, makes a charge of more weight than any of these. He says:—

"It was discovered, for the first time, that Mr. Deutsch was too valuable a public servant to be spared to go to the opening of the Suez Canal. The authorities began to have in Mr. Deutsch's case a high sense of what was due to the public service, and their scrupulous integrity was summarily vindicated at his expense. In fact, no personal feeling was allowed to interfere with what they doubtless conceived to be their duty as administrators of a great public trust. They carried the principle so far, that when a document numerously signed by the Dean of Westminster, Lord Strangford, Rawlinson, Lane, Layard, and others (every one of whom stood at the head of his own department in special learning), petitioning Parliament to appoint Mr. Deutsch keeper of Semitic antiquities at the British Museum, was handed to the authorities of that institution, to be through them presented in due form to the trustees, the document being slightly inaccurate in its technical terms of address, was quietly shelved and never presented at all."

There are usually two versions of a story, and the Museum authorities may have a complete reply to this serious impeachment. If they have, they owe it to themselves to give it forthwith. If they do not do so, some inquiry should be addressed to the trustees through Parliament.

COST OF PAVING IN LAMBETH.

AT their meeting last week, the Lambeth vestry were engaged in a prolonged discussion on the large amount of paving required in the parish. The committee of works reported that the cost of substituting tar-paving in footways now gravelled would be about 37,778*l.*, and if asphalte was used the cost would be about 68,406*l.* The committee further reported that 18,000*l.* were required to put the paved footways in proper repair, and that a great portion of this was very much needed, but that circumstances combined to render the present time inopportune for recommending a comprehensive plan of dealing with them. Still, as some provision must be made to meet a portion of the work, the committee had provided 7,000*l.* for this purpose, to be expended in the localities most in need of attention; and they state that this outlay, if annually maintained, will not accomplish for many years the work the vestry has before it. The recommendation of the committee to spend 7,000*l.* in the required paving, together with a similar sum in future years, was adopted.

HYDE-PARK-CORNER.

IN reply to Mr. Goldsmid, in the Commons, Lord H. Lennox said he had not yet had time to consider the question with reference to the new road from Hamilton-place to Grosvenor-place, a question which would more properly have been addressed to his predecessor in office, the right hon. the member for Clackmannan. Mr. Adam said he had brought this subject under the consideration of the late Government, but owing to the pressure of business they could not take it up at the time. The Duke of Westminster was disposed to deal in the most liberal manner with the proposal which had been made to him with the view of facilitating the traffic at Hyde-park-corner. He had had an interview on the subject with the duke's agent, and a plan was suggested which, however, would somewhat interfere with the use of the park. There were two plans he would suggest for consideration. The first was that the roadway at Piccadilly should be turned before reaching the archway, and that the road should be made to pass between the archway and the Green-park, leaving the archway standing out in an isolated position, with a road on each side. That would effectually relieve the traffic at Hyde-park-corner. It would necessitate a new entrance to Constitution-hill, and a new gateway, and would be rather expensive. There was a much simpler plan which he would suggest, and which could be carried out in a few weeks. Between the archway and the roadway at Piccadilly there was a broad pavement, and there was also a piece of garden ground. The pavement was broader than was necessary for the foot-passenger traffic, and this might be thrown into the roadway at Piccadilly, making a pavement for foot-passengers where the present garden-ground was, and doing away with the bit of gravel foot-path at the corner of Grosvenor-place,—a plan which would greatly relieve the traffic, although it was not one which could be recommended as a permanent improvement. Colonel Hogg (for the Metropolitan Board of Works) said he should be glad to get plans and estimates from the right hon. gentleman (Mr. Adam).

METROPOLITAN BOARD OF WORKS.

AT the usual meeting of the Metropolitan Board of Works, held on the 27th ult., the Board proceeded to the election of a district surveyor for the district of Bromley, Middlesex. There were sixteen candidates, and Mr. Foulsham obtained the appointment.

BUILDING ACT.

On a report from the Works and General Purposes Committee being presented, recommending the adoption of the Metropolitan Buildings and Management Amendment Bill, laid before the Board about a month since,

General Sir W. Codrington moved as an amendment:—

"That every wall separating the property of owners or occupiers should be built as an external wall, placed wholly on the ground of each separate owner or occupier; that no part of each such separate wall should be of less thickness than 4½ in."

He considered that the present arrangement was a very slack way of dividing property, not only as regarded providing for the safety of the occupiers, but for the purpose of securing adequate protection in case of fire. This was a very important consideration, and he hoped the Metropolitan Board of Works, in dealing with it, would take care of the interests of the occupiers as well as the owners of the property, who should be equally considered.

Mr. Leslie seconded the amendment.

Mr. F. Fowler opposed the amendment, and said, if it were agreed to, the owners of property would be able to build a party-wall only 4½ in. thick, and the adjoining wall would not be bound up with it.

Mr. Carr said he knew something about party-walls, and he felt sure that it would not be safe to carry out the plan which General Codrington had proposed.

The amendment was then put, and negatived by a majority of 20 to 5.

Sir W. Codrington then moved,—

"That in order more effectually to prevent fire communicating from one roof to another, the dividing wall of a dwelling-house should be of the same height above the roof as that proposed for a warehouse,—viz., not less than 3 ft., and that alterations to this effect be made in the Bill."

His object in moving this amendment was to prevent the communication of fire from one house to another, and to give additional security to life. The safety which was given to warehouses ought, in his opinion, to be extended to dwelling-houses.

The amendment was put and negatived.

Mr. Fowler then called attention to paragraph 7 of part 4 of the 7th schedule to the Bill relating to party structures, which provided that a building owner shall make reasonable compensation to an adjoining owner for any loss caused to him by the works therein specified, and moved,—

"That such compensation be confined to the reasonable cost of making good structural damage or damage to the internal finishing and decorations, and that the following words in the said 7th paragraph, viz., 'and of making reasonable compensation for any loss caused thereby to him,' be therefore omitted."

After discussion, the amendment was carried by a majority of 16 to 1.

THE CHANNEL PASSAGE.

A NEW suggestion for improving the Channel passage is offered by M. Roumieu. As the shallowness of the French and English shores and the constant shingle drift offer great hindrances to the formation upon the coast of harbours which will receive large steamers at any time of the tide, this engineer proposes to construct harbours two or more miles out at sea, approached by tunnels from each shore. Accommodation would thus be provided for vessels drawing such a depth of water as would ensure steadiness of motion in any except stormy weather. The harbours (he says) would present no engineering difficulties. They might be formed upon the same principle as the Plymouth breakwater, concrete blocks being placed by divers below the sea-level. Upon the superstructure a lighthouse would be raised, which would also form a ventilating shaft to the

tunnel. Access to this railway tunnel would be gained by sinking a large caisson to the necessary depth, and the excavation from it would help to form the outside slopes of the harbour. The tunnel on either side would not be of a length to require ventilation except at the two ends, particularly as M. Roumieu proposes to dispense with engines, and the air would not therefore be deteriorated by smoke or steam. An inclination of the rails seaward would carry the train to the deep-sea harbour; an endless rope, worked by a stationary engine, would draw the train back again. The passengers and their luggage would be brought to the water level by a powerful lift, and they would then embark on board large and swift steamers, which would perform the passage, of say sixteen miles, in about an hour, the transhipment being no more than is now necessary, and the liability of sickness being reduced to a minimum. Such is the compromise suggested by M. Roumieu between the proposal to tunnel all the way, and not to tunnel at all. Another proposal might be to form these terminal tunnels in such a way as afterwards, if found advisable, to allow of their being completed by a tunnel uniting the two.

THE DISCOVERIES AT EPHESUS.

AT the Royal Institution on Saturday before last, Mr. Newman, of the British Museum, delivered an interesting lecture, illustrative of Mr. Wood's recent discoveries at Ephesus. The lecturer gave a vivid picture of the worship of Diana, in the chief city of Asia Minor, and also of the varied uses to which the newly-discovered temple was applied. It was at once a museum, a bank, and a mint. It contained great stores of bullion, bars of gold, bonds, and acknowledgments of debt. An inscription from the temple stated that it lent money both to the State and to individuals. Xenophon's testimony proved that it was a place where deposits were made. Mr. Wood had brought to light leases which showed that the temple leased lands, and probably the tenure upon which the landed property attached to the Turkish mosques is now held was derived from the ancient practice of the temples of Asia Minor. Mr. Newman confessed his inability to throw much light upon the origin of the worship, but while pointing out that the Ephesian Diana was a purely Asiatic deity, and not to be confounded with the Greek huntress, he made some apposite remarks on the facility with which the Greeks, on settling in Asia Minor, adopted the unknown goddess, and at once proceeded to group around her a number of new legends. St. Timothy suffered martyrdom at Ephesus in consequence, it was said, of his having ventured to come forth and preach against a sacred procession while it passed through the streets, but the lecturer believed it could be shown that this particular procession had nothing to do with the worship of the goddess Diana.

GAS.

THE ruling powers first gave the London Gas Companies a monopoly, whereby they were enabled to share the metropolitan public, as a prey, amongst them, leaving all at their mercy, and obliging them to submit to a never-failing supply of bad gas and ready insolence; and now, it would appear, they are to be allowed to complete their power over the citizens by extorting from them a full fourth more than even their late high prices. They obtained their monopoly on the pretext that the fewer the separate establishments connected with the gas supply were, the lower *could* the gas be given to the public. Were those who allowed themselves to be bamboozled by such an argument stupid enough not to see through it; or did they see well enough through it, but only winked hard, as if they did not see it? The companies *could* thus give a cheaper gas supply; but *would* they? we asked. And *did* they? we again ask. On the contrary, now, we see that having first obtained the monopoly, they are about to reap forced crops of profit from it,—at a time, too, when even their own excuse of dear coal is crumbling down beneath their own feet. This is shameful; or, rather, it is shameless. But the only consolation is that it *must* bring matters to a crisis. The forced transfer of the gas supply into the hands of the Corporate authorities, as in Manchester, is the inevitable result.

In the Commons, a day or two since, Mr. Goldney asked the President of the Board of Trade if he would lay upon the table of the House a copy of the opinion of the law officers of the Crown to the effect that the Board of Trade Commissioners, in settling the price of gas to be paid by the public, were precluded from inquiring into the mode in which the gas companies have raised or expended their capital. In reply, Sir C. Adderley said there was no such opinion of the law officers of the Crown in existence. There was an opinion given by Sir John Karslake, Sir Richard Baggallay, and Mr. Bowen, not as law officers, but as counsel, upon the questions referred to them as to the powers of the Commission appointed by the Board of Trade upon the application of the Imperial Gas Company for a revision of their rates of charge, and that opinion would be included in the minutes of the proceedings of the Commissioners which he (Sir C. Adderley) was about to lay upon the table.

The Birmingham Town Council, it seems, are engaged in doing precisely what must shortly be done in London, either by agreement or by force. They have purchased the properties of the Birmingham Gas Company and of the Birmingham and Staffordshire Company. The latter company is to receive in perpetuity a maximum dividend of 10 per cent. on one portion of the capital, and 7½ per cent. on the remaining portion. The former undertaking is purchased outright for 450,000*l*.

At a special meeting, too, of the Town Council of Nottingham it has been decided to purchase the Nottingham Gas Works, the allowance to shareholders being 6½ per cent. for the first six months, and 6¼ afterwards.

A public meeting has been held at Newington-causeway for the purpose of protesting against the high price of gas. The following resolution was carried:—"That, in the opinion of this meeting, the Phœnix Gas Company ought to supply the consumers with gas at the same price as the South Metropolitan Company does—namely, 3s. per 1,000 cubic feet, free of meter rent." That is something different from the Imperial Company's rise from 3s. 9d. to 4s. 8d.!

ON GOVERNMENT ARCHITECTURE IN BENGAL.*

THE soil of Bengal is more treacherous than that of Holland, and the sands upon which Calcutta rests are the most treacherous portion of the Presidency. What sort of foundations, how deep and how broad, whether concrete or piles should be used, continue to remain uninteresting topics of speculation to the most experienced officials; and in a late yearly report to the Government of Bengal, the Secretary in the Department of Public Works is assumed to have declared that as the walls of every building yet erected in Calcutta were spontaneously disruptured, so all future works must share the same fate—a logical *non possumus* which seems to have been accepted with complacency by the Lieutenant-Governor. In such a soil, the surface of which is devoid of even a hillock, and which resembles the muddy bed of a river, cellars and sunk stories are impossible. It is not deemed advisable to use wooden piles, and though iron piles have been proposed they have never been tried for the foundations of public or private buildings. What is wanted in Calcutta is a platform on which to build—something upon which to balance a building. I would suggest, and it has probably been suggested before, the formation of a colossal table with four, six, twelve, or more legs, which should be deeply immersed in the sand. These legs might be cast-iron tubes (say 5 ft. in diameter), filled with rubbish and broken bricks. Rolled iron girders tripled, secured together with wrought-iron collars, and the spaces between them filled with brick or concrete, could be placed upon these legs to form a frame, and strengthened by transverse girders. Brick arches or flat vaults could be turned between these girders; and, with the addition of concrete, the homogeneous top of a square or an oblong table formed, which would rest upon four, six, twelve, or more points of support. The superstructure would have to be built with due reference to these points; and the constructive skeleton would necessarily consist of four, six, twelve or more brick or stone piers of equal weight; while each floor would have to be put together with lighter girders and arches in a manner similar to the original platform. To complete the external walls the space between the piers might be filled up with iron frames for doors and windows, and concrete or cement blocks coated with glazed tiles; the walls thus formed would be supported upon the frame of the platform; while the internal partitions composed of hollow bricks would rest, wherever they happen to be necessary, upon the brick and concrete top of the table. It seems to me that such a description of building would balance itself; and I was presumptuous enough to propose such a mode of construction to a high building authority in Bengal. Though he was pleased to approve the notion of a table, such as I have just described, he said that it was difficult to get the authorities to sanction expenditure for work which they could not "see"; that the *dekhne kewaste*, or what a French contractor once contemptuously called *ce qui est bon à l'œil*, was the one thing for which it was possible to obtain funds; and so it results that public money is squandered for inartistic "show," and refused for ensuring a scientific system of foundations, at least in Calcutta.

Of the public buildings lately erected in the Indian capital, the least inappropriate is the new Post-office, and the most incongruous the new High Court of Judicature. The former is a specimen of the "Modern European," the latter of the Anglicised Franco-Venetian-Gothic style. The original designs for both, which were very artistic, were made by Mr. Granville, to whom I have already alluded; but it is certain that as far as the new High Court is concerned, he would refuse to father the bantling of which Bengal has been prematurely delivered. The Post-office is composed of huge Corinthian colonnades, the columns of which are built of brick, covered with cement, and a well-shaped dome of iron and cemented brick; and the latter has the merit of representing externally its internal section. But a broad flight of steps projects in front of the columns, and a broad pavement in front of the steps, so that no European can enter the building on a summer's day, except under shelter of an unbrella; nor, arrived on the threshold, can he find relief from sun or rain, even in the recesses of the porticos. That the High Court is a lamentable failure, as far as architecture goes, is nobody's fault; even the substance of Mediæval art is obtained with difficulty from books and photographs, the spirit never; and books, few and imperfect, have necessarily been the only guide possessed by its numerous builders. The judge's entrances are devoid of carriage porches. It should be remembered that no European can walk with impunity in the streets of Calcutta while the sun is up, and the Bengal Government have lately interdicted the construction of such porches in public buildings. Upon a flat terrace-roof, which may be said to cover the whole building, have been placed at intervals colossal iron Mansard roofs, plated with corrugated iron, of a height sufficient to contain two lofty stories, but to which there is no access, not even an eyelet for ventilation. They are thus reservoirs of caloric, so to speak, possessing the additional inconvenience of being permeable to the rain, in constant action from the rays of the sun, and a source of chronic danger from electrical influences.

In designing buildings for India, some past architectural style must, of course, be accepted as a basis upon which to create and fit them for the actual necessities of an Anglo-Indian community. But to transfer the Gothic of Northern France, or England, or even of Northern Italy, to the banks of the Ganges, bears on its face the impress of absurdity. A Greek colonnade, and a Roman arcade, though they may have sufficed to protect the walls of temples and theatres from a European sun, are insufficient against an Indian one; for in Calcutta the spaces between columns and piers have to be partly filled up with wooden blinds or *persiennes*, and these have often to be supplemented with other contrivances to counteract heat. It seems to me that the architect who designs for India, ought to turn, or rather return, to the works of the thirteenth and fourteenth centuries at Delhi, and to some of the later native productions of Agra and Ahmedabad. The best specimens extant of indigenous architecture are in the north-west of India, and its best period is identical with that of the Mediæval architecture of north-western Europe. It is impossible to realise the beauties of the Hindustani school from photographs even of the best description, and no pictures I have yet seen give the true colour of its red sandstone buildings. Mr. Fergusson has described them as

* By Mr. W. H. White. Read at the Institute of Architects. See p. 259, *ante*.

representing "one of the completed architectural styles of the world"; and here I take leave to acknowledge, with other travellers, the debt I owe to him, for means of study and information concerning Hindustani monuments. But the illustrations published in his "History of Architecture," though eminently useful and exact, are not sufficient for students, either European or Native. Both require measured plans, sections, and elevations, drawn to a large scale, of buildings such as those still remaining round the Kutab Minar, the mausoleum of Toghlak Shah, and many of the mosques and tombs in and around the Purana Kil'a, in the neighbourhood of Modern Delhi, magnificent remnants of the Pathan and Moghal dominations. A writer in a well-known journal published in Calcutta, has drawn a parallel between European and Indian architecture of the last century. He says:—

"Hindustani architecture, even when emasculated and depraved, was ever lovely, whilst it remained untainted by European vulgarity and British vandalism. The epoch of Louis XIV., which, as Voltaire has justly shown, spread its demoralising influence over all nations left untouched the new city of Shah-Jehanabad—the modern Delhi—whose noble mosque surpasses the Invalides of Paris, the best work of the elder Mansard, as much as that excels the buildings of the Jesuits throughout Europe. Any carefully-drawn parallel between the last creations of the Hindustani school and the miscellaneous assemblage of abortions, designed without taste, executed without principle, and belonging to no school whatsoever, which emanate from the dark age of Christendom—the eighteenth century—could have but one result; and that may be obtained by ordinary sightseers. Those who run may read. They have but to compare the more modern Hindustani buildings of the North-West with Keddlestone Hall, Derbyshire (of which Government House, Calcutta, is a sublime copy), Blenheim Palace, or Horace Walpole's villa at Strawberry Hill. Domed tombs, arched verandahs, houses, ay, palaces in stone and marble—the works of living men—attest that the Hindustani style, though intellectually degraded, still lives in native hearts. The spirit is willing, but the flesh is weak; and there is no one to point out to a dependent people the principles of construction, which, in the fourteenth century guided the master-workmen of a free and noble craft."*

Government assistance is needed to obtain a scientific and useful knowledge of Hindustani architecture, and to encourage a just appreciation of it amongst Anglo-Indian officials. Englishmen are apt to regard everything "native" as necessarily inferior; and to forget that much of the atrocious taste conspicuous in Indian dwellings of the present day is due to the examples set by themselves and their predecessors, who, although they have given the country political institutions, have destroyed its artistic traditions, and introduced, to fill their place, imported art of a more than dubious complexion. Modern architecture in India ought to be based upon the examples left of the Hindustani style of the thirteenth and fourteenth centuries, which is only a variety of the style of Mediæval Europe fitted to the necessities of Oriental life and the exigencies of an Eastern climate. Strange as it may appear to Indian engineers, every detail of architecture necessary to compose a logical, scientific, and artistic dwelling for Europeans in India is to be found in the country itself. Indian stone, brick, and tile glazed and unglazed, for the walls; Indian vaulting for the floors; Indian arcading and grilles for the verandahs; Indian covered balconies for window openings; Indian domes, terraces, and kiosks to compose the roofs; with Indian parapets and projecting eaves to shelter the façades from sun and rain. All these features, essentially Indian, are known to the ordinary archæologist. If they were used by the engineers, according to the recognised principles of Greek and Mediæval art, with the common sense which usually distinguishes Englishmen in their daily pursuits, an Anglo-Indian method of rational construction could hardly fail to be engendered.

III. A condemnation of the Bengal Department of Public Works is to be found in the actual state of Government architecture in Bombay. Doubtless the existence in that Presidency of a rich Parsi community, and the fact of its chief city being the commercial capital of Hindustan, have contributed to the progress which has marked the construction of its Public Works during the last few years. Comparatively speaking, and mindful of the opportunities enjoyed by each, it seems to me that neither Paris nor Cairo has accomplished as much as Bombay in the same space of time. Not even the first-named city possesses a nobler range of buildings than are now to be seen on the Esplanade at Bombay; and no building among them is nobler than the New University, which, with the local assistance of Mr. Molecey, has just been erected from the designs of our distinguished and ubiquitous President.

There is a peculiar notion which has taken possession of many engineers—not in India alone,—respecting the work of an architect. During my employment under the Chief Engineer of Bengal, I was sometimes ordered to "put architecture" to engineering work; and I think you will bear me out in saying,—as I told the Chief,—that if his "engineering" did not contain the essence of architecture, no power on earth could ultimately add it. I have had occasion, more than once, to hear that constructive details, such as girders, stone lintels, brick walls and arches, are engineering specialties, and that the architect's work is limited to the coat of cement with which the façades of buildings are sometimes dressed. This fallacy is probably the origin of the many extraneous horrors with which engineers are often pleased to spoil their works. It is astonishing to reflect, as it has occurred to me to reflect, upon the magnificent bridges at Delhi and Allahabad, on that over the Sone near Patna, and the Nile at Cairo, at Saltash and other places in Europe, that men who can work such marvels should endorse tricks of so-called decoration which even speculative builders now refuse to employ. Some time ago, when in Oude, I examined a small girder bridge then just completed. It was beautiful in its simplicity, and the fact that it conveyed of its containing no portion which was not necessary to the well-being of the whole. Not satisfied with this, the engineer must needs have two immense pedestals at each end. They were four times the height of a man, they held nothing, and they contributed nothing to the construction of the bridge. They had been introduced as architectural features, and this is what they were:—Square in shape, of solid brickwork, with towards the summit a few bricks laid in projection, on which rested a piece of wood, which in its turn supported more projecting bricks. The rounds of excellent brickwork, seventy in number, had been converted, by means of cement, into the appearance of nine courses of inferior stone; on the lowest stone course an extra thickness of cement had been added to form a base; the last stone course but one from the top had been made into a cornice, of which the piece of wood formed the corona. Upon three faces of each pedestal a parallelogram of cement mouldings displayed the semblance of a wooden frame, the centre of which was filled with a counterfeit wooden panel metamorphosed, by means of paint, into a marble slab; and this is what is meant by the term "putting architecture to engineering."

The Anglo-Indian mode of life necessitated by the climate is not conducive to artistic excellence, nor to those "sedentary and within-door arts which require rather the finger than the arm." The Englishman fitted for India is necessarily "warlike," and Lord Bacon says that "all warlike people are a little idle, and love danger better than travail; neither must they be too much broken of it if they shall be preserved in vigour. Therefore it was great advantage in the ancient states of Sparta, Athens, Rome, and others, that they had the use of slaves, which commonly did rid those manufactures." There are however no slaves under British rule, and the natives of India are equal before the law with those of this country. But if they were not physically inferior to Englishmen the latter would not be there. The career best suited to the educated classes of the Hindu and Muhammadan communities is a subject often discussed, and nothing in the difference between the Viceroy and the Lieutenant-Governor of Bengal is more marked than the advice each has given to native audiences. Sir George Campbell has advocated muscular exercises, horse-riding, buggy-driving, and I think even pig-sticking, in imitation of European manners. Lord Northbrook has advised the native youth to apply themselves to the pursuit of art and commerce, and the first speech he made in public after his arrival in Calcutta, was upon the subject of art. He then urged his hearers to study purely native examples of it in preference to those of European importation. There cannot be any reason why the Hindus of the present day should not achieve for the British the same architectural triumphs that their forefathers accomplished for the Musalman Conqueror. All the Muhammadan buildings in the north-west of India are the works of Hindus; and that something of the artistic spirit of their predecessors still remains in the race is attested by more than one modern example of native architecture. It is declared that the Bengali is bereft of the faintest trace of originality, and that as a copyist he is far inferior to the Chinaman. But it is necessary to be able to copy well before trying to invent. The Bengali has not had the artistic opportunities of the peoples placed more directly under Pathan and Moghal influence; and it says much in his favour that he is a skilful copyist. More at least can be made of him than many of our countrymen seem willing to acknowledge. While I was in Calcutta a few native students, five I think, who had passe and examination at the Presidency College, were sent to the Department of Public Works, to be ultimately converted into engineers. They were all good draughtsmen, and had already acquired the rudiments of architecture, much in the same way as they are learnt in the European schools of art. They were all utterly ignorant of even the existence of any style of indigenous architecture. The best one of them was placed under my charge. He was a polished young Hindu gentleman, whose English was irreproachable, and who, always conversing with his fellow students in our language, was pleased sometimes to appear ignorant of his own. One day, to test his artistic ability, I ordered him to copy, to three or four times the size, the engraving of an elaborate Mediæval fountain, designed by Mr. Burges. He not only made a good copy of it, but added the extra spirit it is necessary to give to an enlarged drawing; and I sent it to the Chief Engineer with some little exultation. The Recording Angel knows that my intentions were good; but so horrified was authority, so convinced was it that an artist, especially a brown one, in the Department of Public Works, was an anomaly that precedent could not justify nor practice initiate, that means were instantly devised for driving the evil spirit out of him; and before I left India I was informed, though I did not attempt to verify the information, that he had been sent to make bricks at one of the Government kilns! This is not the moment to discuss what it is or is not necessary for an architect to know; but it is as well to recollect that the Hindu is made of a very different fibre from the Englishman. To know how to manufacture bricks is undoubtedly useful, but the time required to learn how to use them properly is so considerable, that it may be questioned whether such elementary practical education is not sometimes overdone. It was once thought that to excel in our profession a man ought to have "worked at the bench;" but division of labour is a distinguishing feature of modern existence. In the Hindu, to whom I have just alluded, there was the stuff to make an architect; to have set him at brickmaking was to do too much or too little. To be logical, he should have been taught to make the straw before the bricks, and to extract the coal with which to bake them. It is true European engineers are sometimes called upon in India to manufacture bricks, but this is a phase of the system which is worthy the attention of reformers; because, though a thousand men could equally well make bricks, only one of them, perhaps, could be educated into an architect. An unqualified belief in the "practical," is a creed with which too many of our countrymen are too happy to deceive themselves; and many ignore the fact that nothing practical has ever been accomplished until theorists have expended a vast deal of time over its consideration. The labours of Colbert, in the seventeenth century, and of Adam Smith, in the eighteenth, rendered possible in the nineteenth the practical introduction of free trade. German armies would never have victoriously traversed France had they not been first marched in miniature upon a map. The study of the principles of architecture, little respected in Europe, is still less encouraged in Asia; and architects have some right to address engineers who, in Bengal at least, usurp their functions, and studiously ignore their existence. We are the elder community. On our side are all the books of Europe, on theirs, a library of statistics

* The *Indian Observer*, Feb. 1, 1873.

and official reports; on our side are the imperishable records of twenty centuries, on theirs, fifty years of disastrous experience. Our own destinies are linked with a higher branch of our common art, under a more developed social system; and the artistic future of England, retired from European dissensions, and entered upon the path of universal education, bids fair to be brilliant. It is not too much to ask the Indian Government to promote the study of native architecture amongst the inhabitants of Hindustan. Success in such a task would not only afford a sentimental gratification, but it would practically assist an alien aristocracy; and perhaps it might hereafter be said, with justice, that of the many benefits conferred upon India by British rule, not the meanest was that one which enabled the East, whence art sprang, to participate with the Western nations in the glory of its later achievements.

The moral to be elicited from the action of Government with regard to ourselves is worthy of professional consideration. Administrative, in place of individual, enterprise has been instituted; the original object of which was doubtless to make more use of the military engineers than had hitherto been possible—the argument that they are under the thumb of authority, while the professional man is a free agent, being conclusive; and in India the civil engineer in the employment of the State is amenable to the same strict discipline. Now the responsibility of both is divided amongst so many different officers and grades of officers as to be almost null. But is the responsibility of a "practising" architect defined by law? If a Department carries on a gigantic species of manufacture, is the architect in extensive practice very much better than a professional manufacturer? An Executive Engineer performs the functions of an English builder, with the exception that the capital with which he works belongs to the country and not to himself. The duties of a Superintending Engineer assimilate to those of many London architects, but instead of his interest in a building being diametrically opposed to that of the builder, it is identically the same. He is in the same condition of life, often a personal friend and powerfully influenced by *esprit de corps*. On the other hand, the architect is usually a friend of his client, and sometimes a man of superior education to the builder he employs. It is a point of honour for him to husband his client's money, yet his temptation to spend it is greater than that of the official, since he is paid by commission on the outlay, while official salaries are fixed. A London architect may have ten buildings in progress in different parts of England, each under the charge of an assistant. Why may not a Superintending Engineer have ten buildings in Bengal, each under the charge of an Executive Engineer? The fruits of the Government system may be often bad, but it remains to be seen whether it be the system itself, or the peculiar conditions under which it is worked, which is the cause of failure. The experience of the last comparatively few years suffices to prove that individual architects cannot hold their own in any part of India, and it is gradually becoming clear that even in England it is a task of difficulty to contend against official opposition and ill-will. With a very little trouble the profession, I think, might steal a march upon the administration. I have attempted to show, and circumstances support my conclusions, that a Department is virtually irresponsible. Therefore earnest endeavours ought to be used to get an architect's moral and pecuniary responsibility in all professional matters clearly and satisfactorily defined; and, if you will permit me to say so, no more important subject could be submitted to the consideration of the Congress of Architects, which is to be held this year in London, than that of the liabilities of a member of our profession before the law.

DISCUSSION ON MODERN ARCHITECTURE IN INDIA.

AT the close of the paper read at the Institute of Architects, which we have printed, Mr. Roger Smith, in opening the discussion, said that the condition of Bombay regarding building materials and exigencies was, to some extent different from that of Calcutta. The almost constant presence of a sea breeze made Bombay a place where buildings of a more European character could be tolerated than in Calcutta. The bad foundations were not met with in that city; but in other respects, what Mr. White had said concerning Calcutta was, he thought, in the main, true. In Bombay, and in the greater part of India, the works executed by Europeans were generally Government works. No Englishman went there to settle as a colonist; he only went there to make as much money as he could in as short a time as possible, for he could not long reside there without greatly injuring his health. Being a bird of passage, he rarely attempted building on his own account, and therefore the only buildings of importance were Government buildings for official purposes, — post-offices, universities, barracks, &c. The Department of Public Works undertook the design and execution of buildings, and a very anomalous and unsatisfactory state of things thereby existed. That there was great room for improvement in this respect no one could doubt; and he was glad to note that some attempt at ameliorating the condition of affairs had lately been tried at Bombay. Sir Bartle Frere, when governor of the city, was anxious that, if possible, European architects, should be induced to go there and take part in the erection of large buildings, for which a large sum was made available during his term of office. He was instrumental in procuring designs; but the greatest difficulty was in getting them carried out. One or two buildings were erected by Parsee contractors in Bombay; but the majority of the works, even those undertaken from designs of European architects, has been carried out in a very inferior manner. Mr. Smith would like to have heard in the paper, something about the standing of a civil architect, and as to how far he was a distinct official. If any one had to design works in India, unless for railway companies or for private enterprise, they might take it for granted that the work would be placed in the hands of an executive engineer to be carried out. The wisest way was to make everything as simple as possible, and to leave no point upon which a question need be asked.

Mr. Phené Spiers mentioned that he had been requested at one time to superintend some drawings for public buildings in India designed by a Government engineer, who had been obliged to come to England for the sake of his health. He fancied that they would be in that unsatisfactory state to which Mr. White had alluded; but he was surprised to find that this was not the case, the designs being almost as good on paper as he had seen in photographs and in Mr. Fergusson's book, the drawings being done by native architects, from the design of the engineers. It therefore appeared to him (the speaker) that there was the material in the natives, if it could only be turned to good account; and it was only required, he was of opinion, to have engineers of a certain amount of intelligence and zeal, and with a desire to improve the people, to bring them up to a high standard of excellence. As to the reproducing of what was valuable in the fourteenth or fifteenth century, he was inclined to disagree with the remarks of the reader of the paper.

Mr. Morris considered that the earnestness of purpose evinced by the Imperial Government should not be forgotten; and the wonderful zeal shown in the introduction of works of utility of every possible class and kind proved the great interest which the Government took in the endeavour to ameliorate the condition of the people of India, and could not fail to produce good results.

The President, Sir G. G. Scott, thought the meeting were immensely indebted to Mr. White, both for the instruction and for the amusement which had been afforded them. He had brought before their attention a most important and difficult subject. At first sight the question seemed a hopeless one. They were occupying as conquerors a country in which Europeans could not live for more than a few years, and in which no one cared to stay any length of time without some very great temptation, and in which no architect would venture to establish himself to spend his professional life. The question necessarily arose, who was there that could construct for them. There was only one set of men who were able, in some degree, to carry on works there,—the military engineers. It was inevitable, therefore, that the direction of works should in a great measure be placed in their hands. One would have expected that they would have devoted their attention to the scientific and practical study, both of materials which they required and the exigencies of the climate of the country in which they worked; but he learned with astonishment that upon these very points they failed. It would not be a matter of wonder at their failing in their architectural work, but one could hardly expect them to fail in their practical work. It appeared they not only utterly failed in this respect, but they forbade others to carry out what they were unable to do. The absurdity of this was so gross that he thought it only required to be pointed out to be corrected. He quite agreed that it was useless to carry into India architecture which belonged to totally different countries. English architects should build only in the style with which they were acquainted; and it was utterly useless for him to attempt to carry out Indian architecture. All that was generally known about the subject was obtained from books and photographs; and the only way to adopt was to make the best use of the natives of India. If the engineers and the Government were to take up the matter, and to found a school for Indian architecture, so that a thorough training might be secured in a very short space of time, they would be able to rival the works of their forefathers, which were so much admired.

ARCHITECTURAL IMPROVEMENTS IN LUDGATE CIRCUS AND NEW BRIDGE-STREET.

FOR some time past the neighbourhood of New Bridge-street, extending from the Ludgate-circus boundary to the junction with Queen Victoria-street, opposite the Royal Hotel, has been undergoing very considerable architectural improvements by the erection of large blocks of buildings. Some of these are already almost complete; whilst within the last few weeks the elevations of others have begun prominently to show themselves. Another addition is about to be made to the number by the new buildings to be erected at the south-western angle of Fleet-street and New Bridge-street, which will complete the Ludgate-circus. The preliminary step towards effecting this was taken last week, when the materials of the premises on the site of which the new buildings are to be erected were sold, prior to their immediate demolition. We understand that the new structure is at once to be commenced, and that it will to a great extent resemble the structure opposite, at the south-eastern angle of the Circus, which is now fast approaching completion. This last-named building is erected in the Italian style, the whole of the elevation being in Bath stone. The ground floor, extending from the New Bridge-street boundary to the extreme angle in Ludgate-hill, consists of shops, divided by granite pilasters; whilst the upper portion of the building, consisting of three stories and dormers, is designed for a hotel, the entrance to which is in the centre of the Bridge-street frontage, under a segmental pediment, surmounted by reclining figures. But in addition to the building, as shown in the New Bridge-street and Ludgate-circus elevation, the block is carried backwards to a depth, from the New Bridge-street frontage, of about 150 feet, and under the railway arches. On each side of the railway there is an arcade leading out of Ludgate-hill, with an outlet at the south side of the boundary of the narrow street leading into the railway station, and in these arcades there will be upwards of thirty shops, in addition to those having their frontage to New Bridge-street and the Circus.

Passing along from the last-named building, we notice several large structures in course of erection on the site of what was formerly the Bridewell Estate, and on a portion of which, until recently, stood Radley's Hotel. The most prominent of these consists of three blocks, opposite the railway station, and which occupy the entire frontage of New Bridge-street, from St. Bride's-lane to the Bridewell Hospital buildings. These buildings are being erected on the north, south, east, and west sides respectively of New Bridewell-place, a thoroughfare which has been made through the area of the Bridewell Estate, leading westward out of New Bridge-street, to a depth of 103 feet, whence it is carried south and north, to the boundaries of Tudor-street and St. Bride's-lane respectively. The New Bridge-street elevation of the block on the north side of New Bridewell-place is 65 ft. in length, and that on the south side 28 ft., the entire length of the New Bridge-street frontage being thus 93 ft. The extreme height of the elevation will be 59 ft., and the building, in addition to a basement, will contain

ground floor, together with three stories and dormers. The basement of the building and the ground-floor portion of the elevation is in rusticated stone work, from the Chilmark quarries, whilst the materials used from the first floor to the top of the structure are white brick, with dressings of Portland cement, a considerable amount of ornamentation being introduced into the elevation. The windows in the several stories vary in form, some being square, whilst others are circular-headed. The several elevations on the north, south, and east sides of New Bridewell-place are uniform with that already described, with this exception, that that on the south side of New Bridewell-place has a projecting porch and gateway, the porch being surmounted by a carved pediment. On each side of the gateway there are entrances to this block. The buildings have already been carried up to the second floor, and will shortly be covered in. They are principally intended for chambers. Mr. Richard Roberts is the architect, and Mr. Hart the contractor.

The area on the west side of New Bridewell-place is also rapidly being covered with public buildings, and those of a mercantile character. Amongst these is the new London City Mission House, a building immediately facing the north and south side of New Bridewell-place, and commanding a good view from New Bridge-street. This building, which has already been noticed in the *Builder*, is 50 ft. in height, and built of Portland stone, contains ground floor, and two stories above, surmounted by dormers. The ground-floor entrance has a projecting porch, supported by columns on each side, with ornamental capitals, with a balcony above. The building has just been finished internally, and is now occupied for the purposes of the Mission. Messrs. Spalding & Knight are the architects, and Messrs. David King & Son, the contractors. Immediately adjoining it are extensive new premises which have just been erected for Messrs. Collins, the publishers. This building, which has a frontage of 75 ft. in length, and is 60 ft. in depth, is four stories in height, and is built of white brick, with red brick dressings. The elevation is plain, with few pretensions to architectural effect.

Immediately adjacent to the last-named structure, and having the frontages to the south-west angle of New Bridewell-place and Tudor-street, are two extensive blocks, which are in course of erection for Messrs. Spicer Brothers, wholesale stationers. The block at the corner of Tudor-street will be occupied by Messrs. Spicer themselves for the purpose of their business; whilst the other block, in New Bridewell-place, will be let as chambers. The extreme frontage in New Bridewell-place, of the two blocks is 122 ft. in length, that of Messrs. Spicer's being 64 ft. long, and the other block 58 ft. The buildings are of substantial character, and ornamental in their architectural design. They are 60 ft. in height to the top of the parapet, the elevation consisting of a basement, ground-floor, and four stories, a bold projecting cornice, 3 ft. high, surmounting the third story. The basement, and 3 ft. above the ground-floor are in Aberdeen granite, and above this to the first floor the elevation is carried up in Portland stone. The upper portions of the building are in white Suffolk brick, with Portland stone dressings. Messrs. Spicer's block has a distinct elevation at the angle of Tudor-street and New Bridewell-place, which is one of the most striking architectural features in the buildings. This consists of a principal doorway in red polished granite, with mouldings resting on a grey granite base. The remainder of the dressings are of Portland stone. Over the principal entrance is a tympanum, supported by carved consoles, and similarly carved spandrels over the doorway. The first-floor windows have Portland stone dressings, with panelled heads, whilst the second-floor windows have double columns of red polished granite on each side, with Corinthian capitals, and are surmounted by an entablature, cornice, and pediment. Mr. W. Smith, of Gresham-buildings, and Mr. W. Seymour, of John-street, Adelphi, are the joint architects for these buildings, and the contractor is Mr. Oliver, of Camberwell.

Proceeding along New Bridge-street, in the direction of Blackfriars, what have been designated "New Bridge-street Chambers" are noticed on the east side. These premises have for some time been undergoing alterations and external ornamentation, which are now approaching completion. The entire elevation of the building, from the ground floor to the upper story and cornice, have been re-faced and decorated, and a porch entrance has been erected at the north side. From two polished granite columns on each side, resting upon Portland stone bases, and having carved capitals, spring arches in Portland stone, facing New Bridge-street, and also on the north and south sides, and these are surmounted by a cornice and pediment, also in Portland stone. Mr. Robinson is the architect.

A few yards beyond the premises just named, a large and costly building is about to be erected for the Hand-in-Hand Insurance Company. The foundations are now being got in, and the superstructure will shortly be commenced.

LONDON SLAUGHTER-HOUSES.

A paper on this subject was read last week, before the Society of Medical Officers of Health, at the Scottish Corporation Hall,—Dr. William Hardwicke in the chair,—by Dr. T. Orme Dudfield, of Kensington. The subject, he said, was of great sanitary importance, and must, in all probability, be settled in some way during the present year, the term being near its end that was fixed by Michael Angelo Taylor's Act, 1844, for the suppression of all trades scheduled as noxious within a limited area of roads and dwellings. A brief retrospect of the course of legislation with reference to slaughter-houses was given; and in illustration of the general ignorance of the provisions of the Act of 1844, it was stated that hundreds of such establishments have come into existence during the last thirty years, in direct contravention of the Building Act, being within the prescribed limits in which no new business of a noxious character was to be allowed; and speaking particularly of such of these as had their origin during the last eighteen years,—the lifetime, thus far, of the Local Management Act,—there could be no doubt they ought never to have been licensed at all. The Bill to repeal the abolishing clause, brought into Parliament in the last session by Dr. Brewer, was withdrawn upon a reference of the entire subject to a Select Committee of the House of Commons. The evidence given before that committee was emphatic and, apparently, decisive on both sides alike. On behalf of the butchers it was contended that the improvements effected under the licensing system had rendered slaughter-houses innocuous, while the powers of inspection and opposition to renewal of licences conferred upon local authorities were sufficient to insure all sanitary requirements being duly carried out. The results of personal observation led Dr. Dudfield to question the accuracy of this view, and the ground he took was in harmony with that portion especially of the Committee's report which stated the desirability of constant inspection, and of precise, stringent, and uniform regulations, with the ulterior object of using that inspection and those regulations for the detection of contagious diseases in animals, and preventing the sale of unsound meat. A slaughter-house should be a detached building, with a fair surrounding air-space; nor near accumulations of foul-smelling refuse, and sufficiently distant from other buildings to preclude offensiveness. It should be airy, well lighted, and open to the roof; the walls being formed of impervious materials, so as to admit of thorough cleansing with soap and water, and the flooring also should be impervious, and slope to the drain, which should be incapable of disturbance by rats or foul air, or for the purpose of passing blood and filth into the sewer; a catch-pit for blood should be provided, and an abundant high-pressure water supply be always available. So far are the existing slaughter-houses from fulfilling these conditions, that their use may be described as usually an accident—a shed, a wash-house, a stable, or mews, being converted wholly or partially to the purposes of slaughtering. Amongst facts ascertained by actual inspection, Dr. Dudfield stated that many of the slaughter-houses could be approached only through the dwelling-house or shop, horses were sometimes stabled in them, and in other instances there was full connexion with the stabling; frequently the layerage was contained within the slaughter-house; some of the premises had dwelling-rooms in actual occupation above them; in two-fifths of the total number visited the drainage was found to be out of order at the very time when, as a preliminary to the annual licensing, inspection must have been looked for; and, in several cases, light was obtained by opening the doors, so that the business was carried on in public. All these conditions were quite consistent with an appearance of cleanliness such as would impress favourably an inexperienced observer, and yet it would have been unreasonable to require their amendment at the cost of a considerable outlay for the improvement of premises so soon to be closed by the operation of law. The alternative system of public abattoirs had worked so well wherever introduced, that it could hardly fail of success in the metropolis. It was not desired nor desirable to establish one vast abattoir, but a sufficient number of such places of moderate size to meet the necessities of the trade and of the community, while enabling the slaughter of diseased animals and the traffic in unsound meat to be effectually prescribed. Such a number of private slaughter-houses as 1,700 was absurdly in excess of every legitimate requirement. It was to be observed here, that only in connexion with public establishments could constant and effectual inspection be carried out, good sanitary conditions ensured, and cruelty and the sale of bad meat be prevented.

Drs. F. G. Burge (Fulham District), George Buchanan (Local Government Board), Hardwicke (Paddington), Iliff (Newington), Tidy (Islington), Stevenson (St. Pancras), Sutton (Shoreditch), Netten Radcliffe (Local Government Board), Vinen (St. Olave's), and Liddle (Whitechapel) took part in the discussion which followed, and a resolution affirming the necessity of abolishing private slaughter-houses, and erecting public abattoirs under the Corporation of London or the Metropolitan Board of Works, was adopted by all but two votes.

THE STUDY OF DECORATIVE ART.

At the usual fortnightly meeting of the Edinburgh Architectural Association, held in their rooms on the evening of Wednesday, the 25th ult.,—Mr. John Bryce, president of the Association, in the chair,—a paper, having for its subject "The Importance of Mural Decorative Art as a Study for the Architectural Student," was read by Mr. Thomas Bonnar. Proceeding to sketch the rise of Decorative art from the earliest known period, as illustrated in the ruins of the Ancient Egyptian cities, to the high perfection which it reached in the Greek examples we are acquainted with, Mr. Bonnar drew attention to the indications which were possessed by the latter, showing its Egyptian origin. Passing on to speak of Roman art, which he said exhibited evidences of the influence of the Early Classic, and which, although it did not seem to be as successful in conveying the same sense of originality expressed in the Greek, nevertheless established a standard and authority in works of ornamental colour and decoration which renders it a worthy monument of the great people from whom it emanated. The Mediæval era was next touched upon as being noted for the deep religious feeling pervading its works, and was spoken of as the era of a style of decoration—when modified to fit our times and circumstances—which no other could surpass. But the adaptation of this style of art without reference to its suitability, and retaining all its errors and crudeness of colour and design as instanced in the works of some of our modern decorators, was severely criticised. The position occupied by decorative art on the Continent was next glanced at, and its exponents and patrons received eulogium. Its backward state in this country was then considered and ascribed to the want of hearty and discriminating patronage on the part of the wealthy classes generally. This cause also created a desire on the part of table decorators to seek a more congenial sphere of action in the social status obtained by the artist, and accounted for its losing workers who have succeeded in many cases in realising a wide fame, and in proof of this the names of several well-known artists were quoted, who had begun their career as decorators. In order to obviate this difficulty Mr. Bonnar sought to impress on the minds of architects the necessity of giving mural decoration as a study more consideration than it has hitherto received. He believed that with consistent and skilful treatment observed throughout a house, in design and colour, besides the pleasing and delightful sensations created, there would result an increased value to the building, and an impetus would be given to one of the most valuable assistants of architectural art. Mr. Bonnar brought his paper to a conclusion by quoting the observation made by Wilkinson on the same subject:—"Those who think that their

acquirements as artists would be lowered by their condescending to decorative work or to ornamental design would do well to remember that neither a Giotto nor a Raffaelle thought himself degraded by a similar employment of his talents, and that by improving the general taste they would promote a greater appreciation of the beautiful." The interest of the paper was enhanced by a number of sketches and coloured drawings of already executed works, together with specimens of new methods of wall decoration, some of them specially adapted as background for pictures. A lively discussion followed.

WAREHOUSE, CHEPSTOW-STREET, MANCHESTER, FOR MR. SAM MENDEL.

OUR engraving illustrates one of the large warehouses for which Manchester is celebrated.

The *basement floor* is used chiefly for the packing and making up of goods, the packing being done by fourteen powerful hydraulic presses. Approaches are obtained from Chepstow-street and Great Bridgewater-street. Leading from this floor, and under the loading-way at the Chepstow-street end, are the engine and boiler houses, &c. Under this floor runs a portion of the River Tib, which it was found necessary to divert from its original course.

The *ground-floor* is used for general warehouse purposes, and has two large covered loading-ways, one at each end of the warehouse. It is approached from both streets. The chief entrance to the warehouse is from this floor in the centre of the building, and communicates with the first-floor by the grand staircase, 10 ft. wide, handsomely arcaded on both sides in stone.

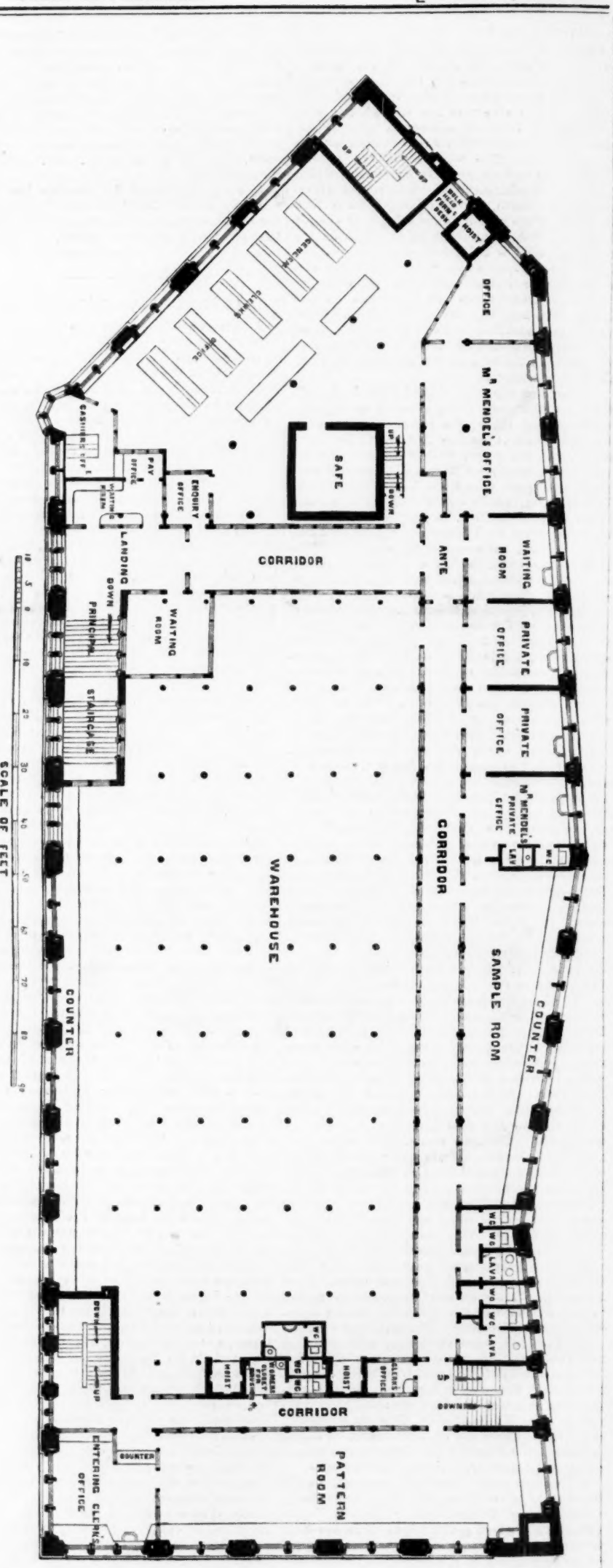
The *first-floor* is diverted to a large general office for clerks, private offices, waiting-room, sample and pattern rooms, occupying the Bridgewater and Chepstow Street ends, and the whole of the back; the remainder is used for warehouse purposes. A large fireproof safe is built on this floor in the general office. From the grand staircase is a corridor, 14 ft. wide, leading to offices, &c., and joining one at the back, 7 ft. wide, which runs the entire length of the building, the flooring of which, as well as the staircase, is covered with 6 lb. lead, with French polished margins of pitch pine. On either side are moulded and panelled pitch pine; screens filled in with plain and chequered plate-glass, French polished, as is the whole of the woodwork and fittings on this floor. A central staircase from the clerks' office communicates with the whole of the upper floors.

The *two-pair and three-pair floors* are used entirely for warehouse purposes. On the latter, however, is a commodious kitchen and dining-room, &c., for the use of the clerks generally. The floors are constructed of beams 7 ft. apart, supported by iron columns, on which are laid 11 in. by 3 in. planks, grooved and tongued with hoop-iron. There are three large hoists running from basement to top floor; three staircases of stone, independent of those already described, connect the several floors, on each of which is commodious lavatory and W.C. accommodation, the walls of which are tiled throughout with coloured glazed tiles in patterns. The warming of each floor is accomplished by several large upright coils, supplied from boilers below. Ventilation flues are built in all piers between the windows. The windows are glazed throughout with chequered and plain plate-glass. The warehouse occupies a total area of 2,400 square yards, and has a frontage of 304 ft.

The contracts for the different trades were let separately in all cases, and have been efficiently carried out by the following:—Excavating and brickwork, Mr. William Healey; masonry, chimney-pieces, and grates, &c., Messrs. J. & H. Patteson; carpenter and joiners' work, Messrs. Robert Neill & Sons; plastering, painting, and French polishing, &c., Mr. William Hood; plumbing and glazing, Mr. Robert Heyworth; slating, Messrs. J. Kirkley & Sons; cast iron-work, Messrs. Bellhouse & Co.; ornamental wrought ironwork, Mr. Robert Jones; all of Manchester.

The engine, boilers, and presses were supplied by Messrs. Nasmyth, Wilson, & Co., of Patricroft, near Manchester.

The building was designed and partially carried out by the late firm of Speakman & Charlesworth, and has been completed by their successors, Messrs. Speakman, Son, & Hickson, of Manchester, at a total cost of 40,000*l.*, exclusive of site and machinery.



WAREHOUSE, CHEPSTOW STREET, MANCHESTER.—PLAN.

WAREHOUSE, CHEPSTOW STREET, MANCHESTER, FOR MR. SAM MENDEL.—Messrs. Speakman, Son, & Hickson, Architects.

DISCLOSURES FROM THE NORTH OF ENGLAND.

FOR some time past the *Builder* has directed the attention of the Government Board to the sickening and appalling condition of the towns and villages in the county of Durham; and a report recently made by Dr. Thorne, one of the principal medical officers of the Whitehall Board, as to the sanitary condition of the Auckland Union, contains such startling revelations as may exceed belief in the minds of those who have not looked into such matters for themselves. The Government Inspector says:—"The Local Government Board had long had under its consideration the high death-rate and prevalence of disease in the Auckland Union, and had it not been that one of their Inspectors, who was deputed to make the present investigation, had died, it would have been made some months since." [Dr. Gwynne Harries, whose case of virulent typhoid fever, contracted on a visit to Auckland, was reported in the *Builder*, and to whose widow a deserved pension has been granted, at the instance of Mr. Gladstone.]

Before going into the death-rate and prevalence of disease in this particular district, he might say that the deaths from all causes in England and Wales, during the ten years ending 1870, had been 2,242 per 100,000; in the same proportion 81 were from fever, and 97 scarlet-fever. In the thirteen registration districts of the county of Durham, the figures were 2,249 from all causes,—101 from fever, and 155 from scarlet fever; and in the Auckland registration district the figures were 2,396 from all causes,—124 from fever, and 198 from scarlet fever.

It would thus be seen that the death-rate in the Auckland Registrationdistrict was alarmingly high. Then again with regard to the infantile mortality during the ten years ending 1870, there were in every 100,000 children under twelve months old, 18,041 deaths from all causes in England and Wales; 18,517 in the thirteen registration districts of the county of Durham; and 20,725 in the Auckland Registration district. These were figures of which there could be no dispute, as they were the figures of the Registrar-General.

With reference to the districts of the various Local Boards, he found in the Bishop Auckland local board of health district, that the death-rate during the past two years has been 29·0 in 1872 in 1,000, and 36·1 in 1873, a *truly appalling* death-rate; and those rates were calculated after deducting the deaths occurring in the workhouses of persons who were not previously resident in the local board districts; the rate from fever alone was *five* times that obtaining in London and the large cities!

One of the most painful features noticeable was the waste of infant life in the Auckland Union. In the Bishop Auckland district, out of every 100 children born alive more than 28 die the first year. The diseases principally causing this mortality were typhoid, or, more properly, enteric fever and scarlet fever. The spread of enteric fever was always associated with excremental pollution of air breathed or water drunk. Bad drainage and water supply were the cause of this poison. Loves Bitchburn, in the district, was one of the most disgraceful places he ever visited; the inhabitants were under the necessity of having to go to a water-pond a quarter of a mile distant. The water was simply filthy. In Bishop Auckland he found in every case that there was a large escape of sewer-air into houses where cases of enteric fever had occurred. The remedy, he thought, was obvious, viz., to carry the sink-pipe to the outside of the house, and to cut it off, allowing it to flow over a properly-trapped grating covering the drain inlet. No direct interior communication between interior of houses and sewers should exist; except in cases of w.c. soil-pipes, all connexions should be severed, and in cases of soil-pipe it should be thoroughly ventilated. The ventilation of sewers he considered most important. In many cases the usual position of rain pipes or spouts by the side of houses were to be deprecated, for they were simply ventilated from the sewers, carrying the sewer air up to and through the open bedroom windows.

The middens in the district were all open, and the contents got saturated with rainfalls and slops. Then, again, the middens were close, and parallel with rows of cottages, polluting the whole neighbourhood.

There were long rows of houses in several villages without any closet accommodation whatever, whilst at others there was only one closet to ten houses.* He also found scarlet fever patients occupying the same bed and rooms as healthy persons.

With reference to pitmen being a dirty class, so far as he could see that was not the case. It was a perfect disgrace to the rich colliery-owners that such a state of things should exist.

It was not his place as a medical man under Government, to recommend any special or particular method to be carried out. That was the province of architects, engineers, or surveyors. It was only his duty to point out the evils causing so much sickness and death, and to point out their remedy without interfering with structural works. He might just add that fevers were the most expensive of diseases, carrying off those in the prime of life as well as infants.

It was to be hoped that the dens he had seen would be swept from the face of the earth, and in their place suitable dwellings at once erected. The Local Government Board would shortly send round circulars that would enable the medical officers to reach the owners of the properties who disregarded the notices left on them six months ago to erect decent places for the inhabitants.

In connexion with the Government inquiry, the pitmen now ask, are they to wait till the Bishop of Durham falls a victim to the diseases that are slaying those who live around his palace—"The Castle," Bishop's Auckland,—at a rate greater by 5 to 1 from typhoid and scarlet fevers, than is proved to be the ratio in London and other large towns.

* See view and description of Pitmen's Dwellings of this neighbourhood, in "Another Blow for Life," by Geo. Godwin, pp. 120-123 (1863), and previously published in this journal. A calculation of the number of lives sacrificed during the eleven years that have followed, through inattention to the warnings then and before that time given, would appal the most thoughtless.

INTERNATIONAL EXHIBITIONS AND TECHNICAL EDUCATION.

IN the course of a paper on the London International Exhibition, read last week, at the Society of Arts, by Lieut. Cole, Dr. Lyon Playfair in the chair, the reader said, the usefulness of the Annual International Exhibitions lies in their bearing on technical instruction, and opportunities afforded for the study of particular industries; and in view of increasing the sphere of their usefulness, her Majesty's Commissioners have invited the alliance of corporations, trade companies, and special societies, in order that the students in schools connected with them may be sent to study the Exhibition. Considerable support has already been met with towards the furtherance of this object, and a National Association for the Promotion of Technical Instruction has been formed. This Association consists of two classes of members. A subscription of 5*l.* entitles the subscriber to receive 200 tickets for artizans or 400 tickets for children, together with a transferable season ticket; a subscription of 3*l.* entitles the subscriber to receive 120 tickets for artizans or 240 school-tickets, together with a non-transferable season-ticket. The artizans' and children's tickets will be available on Mondays or Saturday during the months of August, September, and October; and the Board of Management have it in contemplation to institute a series of lectures on the industries shown in the Exhibition. This Society has already commenced to make use of the Exhibitions for giving aid to technical instruction. This aid, which can be afforded by no other means, consists of scholarships offered for the best examination in the industrial classes of each year. The technological examinations conducted by this Society furnish the necessary machinery, and the scholarships are awarded on the condition that the recipients go for one year to some place of scientific instruction, such as the Royal School of Mines, the Royal College of Science in Dublin, Owen's College, Manchester, or the English, Scotch, or Irish Universities, or other approved schools, or travel abroad for the purpose of improving themselves in their trade.

In 1873, two scholarships of 50*l.* each were awarded for the best examinations in carriage-building and steel manufacture; and this year similar scholarships will be offered for examinations in civil engineering, leather and harness, and in methods of heating.

At the close of the paper, Mr. Henry Cole, C.B., said the Exhibition of 1851, with which both the chairman and himself were connected, had been a fruitful parent, but none of its successors had equalled it, either in brilliancy or financial success. It was the means of introducing many novelties, and also of reviving much which was thought to be new. As, for instance, he might mention reaping-machines, for which the Americans took great credit, though, in fact, an exactly similar machine was now in the Patent Museum at South Kensington, which was invented some thirty-five years ago by the Rev. Mr. Bell, and had been at work in Scotland until a very recent period. Having briefly alluded to the succeeding Exhibitions at New York in 1853, and at Paris in 1855, which were not so successful in a pecuniary point of view; to the London Exhibition of 1862, which very nearly paid its way; to the Paris Exhibition of 1867, which cost about half a million of money, and led to an immense number of law-suits; the British Commissioners having been involved in several, though they got out of them at such a nominal expense as to show they were not much in the wrong; and to the Vienna Exhibition of last year, which he believed contained a brilliant assemblage of objects, though it entailed a loss of more than a million sterling;—Mr. Cole said he could not avoid the impression that the world was getting tired of Great Exhibitions, and he doubted if there was any chance of one being held in England for a long time to come; at any rate, such an enterprise would require a guarantee fund of from 1½ to 2 millions. Still there was a great demand arising for technical instruction, a phase which was translated in various ways, some even thinking that the State ought to establish workshops,—*ateliers nationaux*,—which he thought a mistake; for in his opinion it was hardly the business of the State to decide on the calling or occupation of any of its citizens. All were agreed, however, that English people should be as well instructed as those on the Continent, for the lesson could not be mistaken, that the nation which had been able to gain the greatest victories in arms was the nation which was best educated, — that the German nation, which throughout its whole extent provided not only for the education of the infant and the youth, but also for the instruction and civilisation of the adult, was more advanced than any other in Europe, as well in the arts of peace as in military pursuits. Now technical instruction seemed capable of great development by means of Exhibitions. Of late years Parliament had not only determined that all children should learn to read, write, and cipher—which was but a miserable termination to education—but also that those who desired it might be assisted in acquiring the elements of science and art; some 25 subjects being open to them, including botany, chemistry, geometry, physiology, &c. Any one could start a school in a garret or a cellar; no credentials were required; but if the students passed the requisite examinations, the teacher received from the Government a certain reward for his labour. But there still remained the question of applying the science so learned. He did not think the State should interfere in this, as some suggested, but there could be no doubt that it was of the highest advantage to all the world to see what was being done in the different industries, and what improvements had been introduced; and it appeared to him, therefore, that Exhibitions afforded a mode in which technical instruction could be conveyed with the greatest advantage to all parties. At present, England was said to be at the apex of manufacturing industry, but it was evident that other nations, Germany especially, were treading closely upon her heels, and if she were not to be a loser in the race, she must use every effort to retain her place. To this end he had been very pleased to be able to render any assistance towards making Exhibitions useful as means of technical instruction, and he doubted not they would be so increasingly in the future. They had fine art exhibitions at the Royal Academy, commenced by the Society of Arts; agricultural, floricultural, and various other exhibitions; and it would never do for the greatest manufacturing people in the world to let it be said that they could not get up an industrial exhibition, in which science and art realised their highest aims. Although they were rather difficult to manage, these exhibitions had hitherto proved financially successful, and he believed they would do for the industry of this country that which could be done by no other means.

Major Beaumont, M.P., thought Mr. Cole was

quite correct in saying that one of the main objects of these Exhibitions should be the technical education of the people, for it was by this means only that England could hope to retain her commercial supremacy. This was due in the first place, no doubt, to her mineral wealth; but coal and iron were now being found abundantly in other parts of the world, thus placing other countries on a level with ourselves as regards natural advantages, and rendering it even more necessary than ever for education to be attended to. Now he thought Exhibitions were perhaps the most popular way of imparting technical education, combining, as they did, instruction and amusement. He had seen something of them, both as exhibitor and manager, having had the control of the machinery department in the Paris Exhibition of 1867, and he feared they had somewhat fallen off in the public estimation. Many large manufacturers seemed to be getting tired of them, and did not care to exhibit, and this feeling he attributed to their being in some cases made too much like huge bazaars, the instruction being too much sacrificed to amusement, and the exhibition of real improvement and important manufactures giving place to petty huckstering. This tendency culminated in the Paris Exhibition, where large manufacturers found themselves to some extent pushed on one side by exhibitors whose goods were more of a bazaar character. He believed, therefore, that it would be advantageous in every way to keep instruction in view rather than amusement, and this was the especial feature of these annual Exhibitions. It was supposed that a certain lapse of time must take place in every trade before they could have made progress sufficient to warrant them again appearing before the public as exhibitors, and if that were properly carried out, they might fairly expect exhibitors would only come forward with something which it was really worth while to show. Thus Exhibitions, instead of being mere spasmodic efforts of feeling, would become permanent means of instructing the people. In one respect the Paris Exhibition stood alone, viz., in the admirable arrangement of the different objects in zones, which again were divided laterally, according to the countries, so rendering it perfectly easy for a visitor to discover what he was in search of, and study it with its cognate objects, instead of being obliged, as was frequently the case, to go from one end of the building to the other.* The circular form, however, was not well adapted for arrangement, particularly with reference to machinery. At Vienna there was a most splendid collection of goods; but the difficulty of finding anything was almost insurmountable. The English collection was highly creditable to the nation, especially considering that Parliament had voted very little money for the purpose, instead of from 100,000*l.* to 130,000*l.*, as it did for the Paris Exhibition. He felt quite satisfied it was the duty of Parliament to give a certain amount of support to exhibitions of this kind, though he would not venture to lay down the limit to which it should go, and that they would do wisely to spend public money in giving encouragement to exhibitions when properly conducted, and particularly when principally devoted to objects of real utility.

Mr. Pearsall thought, considering the large extent of wall-space occupied, which rendered it quite impossible for one to make himself acquainted with the Exhibition in any one visit, that it would be well if greater facilities were offered by reducing the charge for admission.

The Chairman thought that Lieut. Cole had shown them very clearly that the Exhibitions to be held in this country in future must be limited to a very few subjects, probably to fewer even than were now included in the annual Exhibitions, and that the real object of such exhibitions of industries occurring once in every ten years was to compare the progress made in industries all over the world, in order that they might take stock of what was doing both in England and other countries. It was a remarkable thing, looking at the progress of industry over Europe, that the mere possession of the materials of industry was the smallest factor in production. This had resulted chiefly from the facilities of intercommunication, by which raw material could be carried from one part of the world to another at such comparatively cheap rates, that the possession of that raw material was as nothing in comparison to the skill and intelligence applied to turning it to utility. For instance, cotton was exported from America, it came to this country, was converted into calico, and sent out again to the United States, and, after all the cost of converting and carriage, it undersold the mills in America. That was even more extraordinary in the case of a country where there was no fuel, like Switzerland, where this bulky raw material had to be carried overland by difficult mountain roads, and where coal had to be got from Belgium, France, or Germany, yet in that country cotton was converted into a useful substance, and sent back to America, still underselling the country which produced it. This showed that the possession of raw material, however important, was insignificant when compared with the science which converted that substance into a useful product. Last year, in Switzerland, he remembered visiting a narrow valley, some few miles from the baths of Ragatz, closed in with a mountain, over which there was nothing but a mere mule-path. He found the whole place teeming with industry. Every part of the valley was taken up with works for the production of calico and dyed goods, especially Turkey reds, competing with Glasgow, Manchester, and other places, for cheapness of production, and sending the products back to America. Ireland, which possessed infinitely greater facilities for manufacturing industries, having a seaboard, which Switzerland had not, and though it had no coal, being near the coalfields of Wales and Scotland, with abundant intercommunication for raw material, yet with all these advantages had scarcely any manufacturing industry. What was it that made Switzerland so busy in all parts of the country, and left Ireland so unprosperous? There was only one answer, the education of the people. In Switzerland every child was taught well at school; they were not satisfied with the miserable three Rs which were considered sufficient in England, but really only constituted the knife, fork, and spoon of education without any meat. As soon as the children passed out of school with an infinitely greater knowledge of the world around than the three Rs can ever give, with a knowledge of economics in the best sense of the term, they passed into a better school, where they were taught the sciences bearing upon industries, and this made Switzerland prosperous in spite of all its difficulties. This was a question to be deeply considered. In the metropolis there were 130,000 children not possessing any education at all, or scarcely any worthy of the name. What would any parent before him think of ending the education of his children at eight or nine years of age, when they were just able to read a paragraph in the newspaper or write a small sentence from dictation? Yet that was the education which the children of the working classes of this country considered it a great merit to obtain,—an education which could not bear the friction of the wear and tear of life. Unless this was fully understood, and the people were educated according to the new requirements of the world, it would be useless to expect a continuance of the prosperity which the great wealth of raw materials in this country, and the energy and honesty of the people, enabled them to enjoy. Twenty years was a small time in the life of a nation; but even in that time some industries had nearly vanished from this country, and unless the schools were raised from their present position, unless the artizans were instructed so as to enable them to take that intellectual position which the progress of the world required to promote the wealth and industry of this country, the consequence would be really serious. He was, therefore, glad to hear such a discussion in that room, because it was in the Society of Arts that the Exhibition of 1851 had its first birth. It was the Society of Arts which first had the courage to promote higher education by means of examinations throughout the country, and which had recently taken up the larger subject of technical education, and had sown a small seed which might grow into a great tree. If they had faith in themselves and continued in such useful acts, the country would recollect that the Society of Arts, small as it was, had had an enormous share in improving the state of the country, and the arts and manufactures for the promotion of which it was established. The Exhibition of this year he was told would be an excellent one, being got up with energy and great judgment, and ought to succeed. He was not so sanguine as Mr. Cole in thinking that Exhibitions were a great financial success, but as yet they had not been a failure, and the Exhibition shortly to be opened with limited industries would prove whether the public would support them and make them self-supporting.

* The plan was stolen from the *Builder* without acknowledgment; as we have before proved.—ED.

SUGGESTIONS AS TO FIRE-PROOF CONSTRUCTION.

SIR,—Being much interested in arriving at a satisfactory solution of the important question of fire-proof construction, which has so much occupied attention of late, I trust you will allow me, through the medium of your influential columns, to make a few suggestions in the hope of directing the attention of scientific men to certain points not, at present, perhaps, quite sufficiently considered by our constructors, but on which, to a considerable extent, the whole question appears to depend, viz.:—

1. That buildings, of the warehouse-class especially, should be constructed wholly of incombustible materials; and of such, moreover, as are unaffected by intense heat.

2. That they should be built in compartments capable of instant isolation.

3. That they should be proof against fire from without.

4. That in the event of fire in any one compartment, and the inevitable consumption of its contents, an intense accumulation of heat, to endanger the building generally, should be impossible.

To secure the first in a strictly sound and scientific manner, the highest talent of civil engineer and architect is demanded. The use of wood constructionally should be discarded, and our scientific men might do good service by discovering a mode of construction with known substitutes which should dispense with its employment. The too-free use of iron in exposed situations has been found most objectionable; stone has equally failed; and good honest brickwork, especially when the mortar used is fire-resisting, would appear, after all, to be the most reliable. As however iron must enter into the construction to admit of the large rooms required in modern buildings it would be essential, and by no means difficult, so to isolate vertical columns, girders, and tension rods, as to make them unaffected by the fiercest heat generated in their immediate vicinity.

II. The fact of the fragile wooden doors of ordinary buildings being the chief outlets for the spread of fire, has scarcely been adequately noticed in the otherwise exhaustive discussions which you have originated. No sooner is the frail door burnt through, than the fire rushes up the staircase, which thus acts the part of a huge chimney in creating a draught and increasing the fire, being itself a vehicle for transmitting the fire to other parts of the building. Even iron doors buckle and twist under intense heat, and have failed lamentably. There is, however, a description of door (of which two have been fixed for some years in the Museum of Building Appliances in Maddox-street) absolutely fire-resisting. They are partly constructed of refractory fire-clay, and are made to slide into spaces left in the thickness of the walls. They overlap the door aperture by several inches, on all sides, whereby their iron framework is well removed from any possible contact with fire.

III. It is needless after the recent narrow escape of Lowndes-square, to point out the danger to which an ordinary town house is liable from the ignition of its external woodwork. Safety from external fire may be secured by the application of the same construction of fire-clay doors and shutters already described, to the external doors and windows. These fire-clay shutters have been made to slide over the wall-faces both internally and externally; and, better still, into recesses in the wall itself, so that on the first alarm of fire the premises may be rendered impervious to the enemy in a very short space of time. One further source of external danger lies in the ordinary construction of roofs with wooden framings, generally as dry as tinder, and readily inflammable, even through their slated coverings in most cases. These should be universally superseded by the cheaper, more durable, and fire-resisting flat roof, now proved, by several examples, to be quite practicable when constructed of concrete, or concrete faced with tiles.

IV. Whilst advocating the provision of all available appliances for "knocking out" incipient fire, such as hydrants, hose, &c., the necessity should, above all, be recognised for such construction as would facilitate the safe

and rapid combustion—*if burn they must*—of the contents of any *one* compartment, rather than risk the contents of other compartments, through *accumulated heat*, by denying to the flames from a portion ignited, a safe and free exit by a recognised channel. To this end a sufficient shaft should be constructed from the ceiling level of each compartment (which ordinarily would prove an excellent means of ventilation) for the purpose of discharging the fire, so to speak, harmlessly up the chimney. The condition of each compartment would be the reverse of an ordinary brick oven, which is constructed to accumulate intense heat (without the slightest risk to its surroundings), whereas the arrangement under consideration would provide compartments structionally as non-inflammable as ovens, with the ever-present means of discharging, instantaneously, accidental fire, whereby accumulated heat would be rendered impossible.

Consideration for your space, no less than the desire I feel to fix the attention and elicit the views of the more experienced, upon the important divisions of this subject, isolation of parts and prevention of accumulated heat,—render it undesirable that I should enlarge upon the practical means which suggest themselves for obtaining the objects stated.

D. O. Boyd.

LIFTING A BRIDGE.

The town bridge at Winsford, which had sunk between 3 ft. and 4 ft. since it was raised about two years and a half ago, has been raised again to its original height by the river Weaver trustees. This was accomplished by means of two of Tangye's patent hydraulic jacks, which were placed upon timber beams, from which also the bridge was from time to time blocked up. The beams were supported upon timber piling, driven close to the four corners of the bridge. The weight of the bridge, together with the temporary timber approaches and extra road materials required to be placed upon it, would be about 200 tons. The masonry of the abutments, which was cracked, is now to be taken down and rebuilt, and the abutments and road approaches have to be raised to correspond with the altered level of the bridge. The operation was performed without any sensible interruption of the road traffic.

BOARD SCHOOLS.

London.—At the last meeting, the following report from the Works Committee was received: The committee have invited tenders for the erection of a school to provide accommodation for 810 children on the site in Upper Earl-street, Plumstead. The following are the respective amounts:—A. Sheffield, 7,997*l.*; J. Thompson, 7,860*l.*; W. Cullum, 7,540*l.*; S. J. Jerrard, 7,492*l.*; J. Cooper, 7,460*l.*; Hill, Higgs, & Hill, 7,334*l.*; F. Johnson, 7,240*l.*; Newman & Mann, 7,146*l.*; Kirk & Co., 6,693*l.* The committee recommended the acceptance of the lowest tender, that of Messrs. Kirk & Co., of Warren-lane Wharf, Woolwich, amounting to 6,693*l.* This sum includes a considerable provision for tarpaving and for laying concrete 5 ft. deep under main walls of building. Cost of site, 616*l.* 16*s.* Cost of building per head, 8*l.* 5*s.* 3*d.*

MORE CITY CHURCHES TO BE DEMOLISHED.

In addition to the several churches in the City which have either already been taken down or are in course of demolition, upwards of a dozen more have now to be added to the number of those which are to be removed. Amongst those which it is stated are to be demolished are St. Edmund the King, Lombard-street; St. Mary, Aldermanbury; St. Mary Magdalene, Old Fish-street; St. Anne and St. Agnes, Aldersgate-street; St. James's, Garlickhithe; St. Michael Royal, College-street; St. Michael, Queenhithe; St. Nicholas, Cole Abbey, Old Fish-street; All Hallows, Thames-street; St. Mary-at-Hill; St. Mary, Abchurch; St. Botolph, Billingsgate; St. Benet's, Paul's Wharf; and All Hallows, Bread-street. This last-named edifice is the church in which John Milton was baptised, and there is a tablet on the outer wall commemorative of the event. The inscription on the tablet, taken from the register, is as follows:—"The xxth daye of December, 1608, was baptized John, the sonne of John Milton, Scriviner," and the font which was then used is still in the church.

CULVERTS AND BRIDGES.

Sir,—In reply to your correspondent, "County Surveyor," who wishes to know the legal distinction between a bridge and a culvert, the following remarks may be of some service to him.

In a case, Rex *v.* Oxfordshire, tried in the Court of King's Bench in 1830, "the Court laid down a general rule as to what description of bridges the county were liable to repair, viz., such as are built across water flowing in a channel between banks more or less defined, although such channel may be occasionally dry."

In the case mentioned by your correspondent, where a turnpike-road becomes an ordinary highway, and the law imposing the repairs of all the bridges upon the county, according to the above rule, all such as would span any natural stream in a channel within banks more or less defined would be a bridge, and liable to be repaired by the county, irrespective of shape or size; and culverts would be such as are made under embankments, or under the road in side cuttings (where there are no natural channels), for the purpose of draining the surface water from the upper to the lower level, and I should say they would be termed culverts irrespective of shape or size also.

Road Surveyor.

In reply to the query of "County Surveyor," the Bridge Committee of the County of Suffolk took counsel's opinion as to the definition of a county bridge, under 33 & 34 Vict., cap. 73, which was as follows:—

"Lord Coke defines it (2 Jus. 700, 701)—'Pons publicus et communis situs in altâ regiâ viâ super cursum vel flumen aqua'; *i.e.*, a structure carrying a highway over a channel more or less defined in which water usually flows, or the normal state of which is to have water flowing in it, even though it be sometimes dry (R. *v.* Oxfordshire, 1 B. & A., 289). Nothing short of that is capable of being a county bridge; and even if it comply with the above definition, but be of trifling dimensions, it has been held not to be one (R. *v.* Whitney, 3 A. & E., 69; R. *v.* Southampton, 21 L. T., M. C., 201). In both of which cases the decision seems to have gone on the ground that the structures were too insignificant to be dignified by the name or rights of county bridges. The culverts, barrel-drains, round arches, &c., seem not to be substantive bridges, that would not fall under the above decisions, and therefore it can hardly be maintained that they could become county bridges."

The Committee, after taking the above opinion into their consideration, reported, 1st. That under 33 & 34 Vict., cap. 73, the county will only be liable to repair such bridges as are genuine and real bridges, previously repaired, or liable to be repaired, by the trustees of turnpike roads, and such culverts, brick arches, round arches, barrel arches, &c., as are within 300 ft. of each end of such bridges, including, of course, the repair of the whole structure of the bridges, together with all fence walls, land arches, embankments, accesses and approaches within the 300 feet. 2ndly. That as in the case of any county bridge built since 1836, the maintenance of the roadway leading to and over all bridges thrown upon the county under this Act, does not fall upon the county. 3rdly. And that, according to the opinion before expressed, foot-bridges cannot be considered to be county bridges. The report was agreed to, and all bridges not being barrel arches over 7 ft. 6 in. chord were accepted as county bridges.

Henry M. Eyton, Ipswich.

DR. JOHNSON.

A short reference is made by Mr. Christopher Cooke, under the heading "Ancient Edifices," to a "Mrs. L. Porter, Dr. Johnson's daughter-in-law." Dr. Johnson never had a son, married or single; so, the person here referred to was no doubt Miss Lucy Porter, a daughter of Dr. Johnson's wife by her former husband;—the lexicographer's step-daughter.

A. H.

HARROW.

A gymnasium for the school has just been erected by Mr. C. F. Hayward, architect. There are workshops for the boys underneath the main floor.

Schools for the teaching of natural science, with laboratories, physical and chemical, are in course of erection there by the same architect. These buildings are being carried out for the Harrow School Tercentenary Fund Committee, established two years ago to celebrate the foundation of the school by John Lyon in 1572.

A public hall is about to be opened in Harrow. It has been erected for a local company, Mr. C. F. Hayward architect, and is intended to supply a want long felt,—for a building suitable for musical entertainments, lectures, &c. It is to be opened by some private theatrical performances, for which it is also adapted.

The accommodation is for 500 nominally, but more can be seated comfortably; and there are committee and other rooms for public or private use.

PERVIOUS WALLS.

In reply to "West Sussex," who asked (p. 226, *ante*) how the rain could be prevented from penetrating his walls of local stone, "East Sussex" writes to say, "From painful experience, weather-tile by all means." We have received the prospectuses of several paints warranted to resist all moisture; but as to these we must leave our correspondent to get information from our advertising columns, and make his own inquiries.

OAK.

Sir,—Will one of your correspondents kindly inform me, through the medium of your paper, what is the best method of finishing oak gates, when they are to be exposed to the weather, so as to protect them from the black stains, which I observe upon most gates under this circumstance?

S. R.

NOTTINGHAM.

The Right Hon. W. E. Gladstone was here last week, and in company with Mr. T. C. Hine, the Local Surveyor of the Newcastle Estate, inspected the dwelling-houses recently erected in the Park, and after walking through the Castle grounds, examined the design made by Mr. Hine for converting this unique example of the Inigo Jones school of architecture into a Museum and Gallery of Art and Science. As one of the trustees of the estate, it was the opinion of the right hon. gentleman that if the terms on which the Corporation proposed to lease the property were satisfactory, it would be as good an appropriation of the premises as possible, and one which would doubtless be highly advantageous to the town.

SCULPTURE AT THE ROYAL ACADEMY.

Sir,—The insertion in your last number of a summary of my lecture on Sculpture at the Royal Academy is a high compliment for which I feel bound to thank you. That it is in the main correct there is no doubt; but I should feel much obliged if you would kindly put right an error, most probably a printer's slip, which misrepresents me. Your report makes me say that in the late Exhibitions there is a "tendency to depend too much on *truth*." What I did was to caution the students against a too great dependence on *touch*. The difference is obvious.

H. Weekes.

MONUMENTAL.

A memorial of the late Captain and Adjutant Barrett, of the Dorset Rifle Battalion, is to be erected by Mr. Benjamin Grassby, of Dorchester, ecclesiastical sculptor. The memorial, which has been raised by a shilling subscription amongst the officers and men of his regiment, will be placed in Wimborne Minster. It will be carved from Caen stone and white marble, designed in the Gothic style, corresponding with the minster itself. The extreme height will be 6 ft. 6 in. A Latin cross, composed of white marble, in *alto relievo*, springs from a rock, at the base of the former lying the figures of the sword and accoutrements of an adjutant. The stone panel containing this representation will be enriched with a canopied design, terminating with a finial, and having shafts of serpentine marble, with caps and bases carved with natural foliage. The spandrels within the canopy will also be carved, and those filling the upper part of the tablet bear Masonic emblems, while along the top is to be a moulded and carved cornice. The tablet will stand upon a corbel, the *facia* of which is to be of white marble and bear the inscription. The lower part of the corbel is to be moulded and carved in natural foliage, and the terminal will be a corbel angel. A memorial will also be placed at the grave in Wimborne cemetery. The cost of the two memorials will be about 60*l.*

SANITARY INSPECTION.

SIR,—What particular qualifications should an "Inspector of Nuisances" under the Public Health Act of 1872 necessarily possess? From what class, or profession, is it supposed such officers will by preference be taken? What salary should be considered adequate for a district containing say a population of 30,000, and an area of 60,000 acres? Would it be considered derogatory to an architect's position to undertake it, seeing that he is supposed to have a knowledge of sanitary appliances, drainage, building, surveying, levelling, &c., and that such appointments are frequently advertised in the professional papers? S.

*** We have already said something as to the qualifications and the duties of sanitary officers, but willingly print the above to induce the expression of opinion on the subject, and to obtain the results of experience.

WORKMEN'S CONTRACTS.

AT the Clerkenwell Court, Ferdinand Battaghierini, a journeyman frame-maker, Great Saffron-hill, was summoned by Mr. Victor Penso, of Brook-street, Holborn, to show cause why he, having entered into a contract to manufacture three dozen toilet-glasses, did unlawfully neglect, and had ever since neglected, to fulfil the said contract.

The complainant stated that the defendant had been in his employ, and in January last he contracted with him to manufacture three dozen toilet-glasses. The defendant was satisfied with the terms, and having drawn 15s. on account he commenced the work, and when he had done only about 5s. worth he left the work unfinished, and had ever since done so, and in consequence he had been put to some loss and inconvenience. It was a common practice for workmen when they had obtained money before the work was done to commence it and then leave it in an unfinished state.

Mr. Barker in strong terms condemned the practice of masters paying their *employés* in advance. It was a bad practice, beset with many disadvantages, and led the workmen into bad habits. He was strongly of opinion that the practice was bad for both parties, and the sooner it was discontinued the better. He should make an order for the defendant to return and finish the work, and for that purpose he would give the defendant fourteen days' grace to do it in; but if, at the expiration of that period, the complainant informed him that the order was not obeyed, the defendant might depend upon it that he would be sent to prison. There were two persons to a contract, and it was not for one moment to be tolerated that a servant, as soon as he had entered into one, and had even been paid the money before the work was done—a practice which he again said was very bad,—should leave his work in an unfinished state, and, as in this case, go and work for another employer.

ROBBERY OF BUILDERS.

FROM Friday up to Tuesday, the trial of Richard Head, builders' ironmonger, of 91, King's-road, Chelsea, on the charge of feloniously receiving a quantity of brass and gas fittings, the property of Mr. Warren Smith, has occupied the attention of a jury, at the Middlesex Session, who have been locked up each night, and all Sunday, whilst the prisoner has been at liberty on heavy bail.

The case has been previously noticed in the *Builder*, but the principal offender and witness, a convict named Corp, has divulged more of his career before the jury than he did at the Westminster police court, and he confessed that he robbed every builder, shopkeeper, or house, he had access to. At Messrs. Trollope's he helped himself, amongst other trifles, to a number of valuable bell-pulls.

Artizans have long held out against employers requiring certificates of their honesty, but if many more cases come before the public eye like the present, "customers" will compel tradesmen to be answerable for the integrity of the men sent to work in their houses.

Mr. Douglas, builder and upholsterer, of Belgravia, some time since took on a detective. Mr. Freake adopted a similar plan, but rogues like this Corp would have set such precautions at defiance.

The jury having returned a verdict of guilty against Head, the Judge said he entirely approved of the verdict, and that there was no doubt the prisoner Head was a participator in the great thefts upon Mr. Smith, and that Corp had been instigated by Head to commit the felonies. The case was another example of the truth of the observation, that the receiver is worse than the thief; for if there were no receivers, there would be few thieves. The evidence, after giving it every consideration, showed that for a number of years the prisoner Head had been purchasing goods at prices infinitely below their value, and at the same time with a consciousness that they were stolen; and the Court would not be doing its duty if it did not inflict a serious punishment, for the temptations to which poor prisoners yield did not exist in Head's case, and the sentence was that the prisoner undergo penal servitude for five years.

It being intimated to the Court that in consequence of the protracted inquiry at the police-court and at the sessions, the costs to Mr. Smith would not fall far short of 1,000*l.* (?), and that the prisoner Head's estate was worth double that amount, the Judge made a further order that execution should at once issue to levy the costs out of Head's business and effects.

THE TRADES MOVEMENT.

Hastings.—The carpenters and joiners have resolved to strike should their demands—1d. per hour increase, and two hours less on Saturday—not be conceded.

Wisbech.—The strike of carpenters and joiners has now come to an end, and those men who have found their places open have resumed work on the old terms. Many of the men's places have been filled up, and they are now thrown out of employment.

Edinburgh.—At a meeting of the painters, the secretary read a letter received from the Employers' Association, intimating their willingness to give a halfpenny per hour advance on and after the 1st of May to efficient workmen. A communication was also submitted from Glasgow, in which it was stated that the painters there were going to demand a similar advance, and requesting that members of the trade keep away from the west during the dispute. After a good deal of discussion, it was moved that the overture of the masters be accepted, on condition that the advance be given from 1st of April, as originally requested. It was also moved that the terms of the employers be accepted in the meantime, and that a request be made for another halfpenny per hour next April; and that the demand of one penny per hour, as formerly requested, be pressed. On the vote being taken, the first amendment was carried by a large majority. It was also resolved that a small committee be appointed to frame a code of working rules, to submit to the Employers' Association at an early date.

Jedburgh.—The journeymen joiners having asked a rise of wages from 6d. to 6½d. per hour, some of the employers have acceded to the request, and the others are expected to follow.

Lanarkshire.—The slaters and plasterers of the districts of Wishaw, Carluke, Hamilton, Uddingston, Motherwell, Lesmahagow, Strathavon, and Ardrie, with the exception of a few who have received the advance demanded, have struck work for the advance of ½d. per hour. The strike is not expected to be protracted, as the men have no organisation.

Berwick.—The operative painters are out on strike, their request for an advance of 1d. per hour on their wages having been refused by the masters. They were offered ½d. per hour advance, but this they have refused.

Glasgow.—A mass meeting of Glasgow joiners has been held, and resolutions were unanimously passed adhering to the demand of a rise of ½d. per hour in the rate of wages, and weekly instead of fortnightly payments; agreeing to confer with the masters on the subject; calling upon the different shops and squads to ascertain the views of their employers on the demand; and requesting union men to do their utmost to get non-union men to join the association. There is said to have been three thousand joiners at the meeting. They threatened to come out in April unless the masters concede their demand for an advance of from 7½d. to 8d. per hour.

The Coal Districts.—A strike of about 12,000 colliers has begun in the South Staffordshire and East Worcestershire districts, and there are fears that it will last some time. The men refuse to accept the reduction of wages of which the colliery proprietors gave notice as a consequence of the fall in the price of coal. Reductions of wages in other districts are being made, in some cases to the extent of 20 per cent. The Monmouthshire and South Wales colliery-owners met at Cardiff, under the presidency of Mr. Fothergill, M.P., to consider a proposal from the men to keep up their wages by doing nothing,—in other words, to limit the out-put of coal, in order to maintain the existing wage rate and price of coal. The masters do not seem to find that arrangement answer, as they have refused to entertain the proposition.

FROM SCOTLAND.

Edinburgh.—For some time past the University authorities have been quietly promoting a subscription for the extension of the College buildings; and the general public will now be asked to participate in the movement. The sum required is 100,000*l.*, and of this, including Mr. D. Baxter's bequest, upwards of 42,000*l.* have been already contributed. The sites of Park-place and Teviot-row have been acquired with a view to the intended extension, at a cost of about 30,000*l.* On the ground thus available, which presents an area of 80,000 square feet, it is proposed, says the *Weekly Scotsman*, to erect buildings such as will enable the University to reorganise not only the departments of anatomy and chemistry, but all the separate departments of medical teaching, on a scale commensurate with the present advanced state of science and the number of students attending the classes. The advantages of this arrangement, with reference to the position of a new Infirmary, are obvious. By the transference of the medical school, with its lecture-rooms, museums, and laboratories, to the immediate vicinity of the hospital, there will be set free a large amount of space in the existing building, which, with due improvements in ventilation and arrangement, will be turned to account for the better accommodation of the Faculties of Arts, Divinity, and Law. Other objects in contemplation are the making of adequate provision for the growing wants of the University library, the improvement of the north front of the present building, now thrown open to the public view by the formation of Chambers-street, and the erection of a hall suitable for examinations and College ceremonials. A reference to the extension of feuing on the estate of Dean has once more directed attention to the proposal of forming a public park on the magnificent slope to the north of Queensferry-road. A strong feeling prevails as to the desirableness of preserving that slope as open ground. It is proposed to form a limited company, with a capital of 100,000*l.* for the acquisition of the area in question, its conversion into a public park, and the handing over of this to the corporation. The ground to be dealt with extends to about 60 acres.

Dundee.—A large portion of the north wall of the Victoria Dock has been completed, but it was discovered that the wall for about 100 yards from its eastern end had given way, and was bulging out, while there were extensive rents in various places through the solid masonry. The wall was inspected by the officials of the Harbour Trustees. There will, doubtless, be an investigation as to the cause of the accident, but in the meantime it is believed that the whole of the part of the wall which has given way will have to be taken down and rebuilt. The opening of the new harbour works, therefore, will have to be postponed.——At a meeting of the Forfarshire Prison Board, a committee was appointed to bring up a report on the whole question of prison accommodation, the expediency of selling the present buildings, and the probable value to be derived therefrom, and on erecting a new prison and its probable cost; and also whether the prison should be for Dundee or for the county; and also whether it would be advisable to sell the three local prisons in Arbroath, Brechin, and Montrose.

Kilmarnock.—Arrangements for the acquirement of a new cemetery for Kilmarnock, to supersede the present burying-ground, which is very much over-crowded, are making progress. The Parochial Board have agreed to the proposal that the scheme should be carried out by a new cemetery company, they providing, at a reasonable cost, whatever ground may be required by the Board. It is understood that an eligible and picturesque site on the farm of Southdean has been fixed upon, for which application has been made to the Duke of Portland. The ground extends to about 15 acres.

Greenock.—Typhoid fever is raging in the most respectable district of the west end of Greenock, twenty-four cases, some of them resulting fatally, having occurred within a radius of 500 yards. The outbreak is causing much alarm, and the sanitary staff are prosecuting inquiries on the subject. The milk supply is suspected.

CHURCH-BUILDING NEWS.

Castle Cary.—The new church of Hornblotton has been consecrated by the Bishop of Bath and Wells. The old church, dedicated to St. Peter, was for many years in a very dilapidated state, and on examination it was found impossible to restore it without entirely rebuilding, as the walls and foundations were so decayed. The rector, therefore, resolved to build an entirely new church, and the site chosen was a few yards to the north of the old building, of which the western gable, with its belfry—more like a dovecot, than anything else,—has been left standing. The old Norman font, the only object of interest in the old church (the church itself was of much later date), has been transferred to the new church. The work has been carried on by the builders, Messrs. Clarke & Son, of Bruton, under the immediate superintendence of Mr. Charles Bentley, clerk of the works. The architect was Mr. T. G. Jackson, of London, Fellow of Wadham College, Oxford. The church consists of a chancel and nave, with a western bell-tower and spire of oak (capable of holding a peal of five bells), covered with oak shingles (which even at the present early date are fast getting that silver-grey colour which unvarnished oak always takes when exposed to the air), and is Gothic in spirit and detail, without belonging to the style of any particular period. The materials are a yellow-brown oolite from the Hadspen quarries, with

dressings of Doulting stone, roofed with flat red tiles made in the parish. In the interior Sgraffito work covers the walls, in which the figures, &c., are formed by cutting away an upper coat of light cement and leaving exposed an under coat of a darker (here maroon) colour. The designs comprise such figures as those of the prophets Isaiah and Jeremiah over the western door; Moses striking the Rock and the Brazen Serpent over the tower arch; and the Annunciation over the chancel arch. One of the features in the church is the east window (designed by the architect, and executed by Messrs. Powell & Son, of London), a five-light window filled with grisaille glass, in the middle light of which is the Saviour hanging on the cross, with an angel in each of the other lights looking upwards at the Saviour. The colouring of the glass is peculiar, and the whole forms a very light window, as is necessary on account of the wall decorations. The five small windows under the belfry are the liberal gift of Mr. & Mrs. Jelly, of The Priory, Bruton. The reredos is of Derbyshire alabaster, with figures of the four Evangelists on blue enamel in the panels, a cross of porcelain (blue) with peculiar lustre (the art of making which, though known in the Middle Ages, has only been lately re-discovered by Mr. De Morgan). The glass pavement is by Messrs. Powell & Son. The fittings in the nave are of oak, and in the chancel of oak and black walnut, inlaid with birds, foliage, and texts in original designs in box-wood.

Dulverton.—The parish church, which is one of the finest in West Somerset, and which was restored about twenty years ago, has been considerably improved during the past year. A reredos of Bath stone, with appropriate symbols and tablets illuminated on zinc, has been erected at the cost of Mr. B. M. Collyns, who a few years since presented the organ. The sacrarium has also been laid with encaustic tiles. The church has also been enriched with a lectern of carved oak.

Patshull (Staffordshire).—The church of St. Mary, Patshull, has been reopened by the Bishop of Lichfield, after undergoing considerable alterations. The church, in its normal state, was a simple oblong nave with a tower at the western end, and a chancel. The Earl of Dartmouth, the patron, resolved to extend it by adding a north aisle and a vestry and organ-chapel combined, adjoining to it, and which are separated from the aisle by an oak screen. The aisle is divided from the nave by three arches with square piers of simple design, and it has a vaulted and groined ceiling. The seating is entirely new, and made by Horsman, of Wolverhampton; that in the nave being of pitch-pine varnished and the chancel stalls of oak. The old oak pulpit of Jacobean workmanship has been refixed upon a stone base, with new steps and handrail, and a new oak lectern has been provided. The encaustic tile paving was laid by Maw & Co., and the heating apparatus, supplied by Whitworth & Higginson, of Birmingham, who also have entirely relaid the roofs with new lead. The windows have been filled in with stained glass by Camm Brothers, of Smethwick. The works generally were executed by the Earl of Dartmouth's work-people upon the estate, under the command of Mr. Charles Hawley; and the whole has been carried out under the supervision of Mr. William C. Banks, of London, architect. It is proposed to make considerable alterations to the existing tower, and to provide a new peal of bells and a new organ forthwith.

Cleobury Mortimer.—Last year, an Early English pulpit in stone was placed in the parish church by Mrs. Childe, and the old pews in its immediate vicinity were removed by the parishioners. This year it is intended to make an effort to continue the work of restoration, and with this view a public meeting has been held, the vicar in the chair, when the rev. gentleman stated that he had procured a report upon the condition of the church from Mr. Wood (the representative of Sir Gilbert Scott), who recommended the remainder of the pews to be removed and the nave reseated, the gallery taken down at the west end, and the tower opened into the church, which will not only give additional space but show the length and proportion of the church, the flat ceiling (which now conceals a roof stated by Mr. Wood to be of unexceptionable beauty, of magnificent timber and in an excellent state of preservation) to be removed and the spire reshringled. These recommendations were carried unanimously, after which he stated 2,000*l.* would be required to carry them out. The vicar headed the subscription list with 300*l.*, and a committee was formed to appeal to owners and occupiers of property connected with the parish, as well as to lovers of architecture, for subscriptions.

St. Faith's.—It is nearly twelve months since the complete restoration of the parish church was determined upon in consequence of a gift of 1,000*l.* being offered by Miss Twining for that object. The tower originally contained five bells; but the fourth having been sold to defray the expense of repairs done to the church about 100 years since, and the third being unsound, it was suggested by some of the parishioners that all the bells should be recast, and formed into a peal of six, and this suggestion being supported by a similar desire on the part of Miss Twining, the work was commenced as soon as possible by Messrs. Warner & Co., London; and the hanging, new frame, and other fittings, have been done by Mr. Wm. Crane, of Marsham.

Rotherham.—The Rotherham parish church is to be closed after Easter Sunday until December. It is expected that the restoration, which was undertaken some time ago, under the supervision of Sir Gilbert Scott, will be completed shortly before Christmas. The work on the exterior of the church has been progressing for some months, but the greater and more difficult part of it still remains to be done. In the interior the renovations will be extensive. The galleries are to be demolished; the pews are to be swept away; the whitewash is to be scraped off the sculpture and the ancient stonework; windows are to be re-glazed; the time-worn timbers of the carved roof are to be replaced; and such general alterations will be made as will allow the original architectural designs to be seen. The most striking feature at present in the improvements of the church is the new window at the east end—the gift of the Earl of Effingham—which has just been completed. The window was designed by Sir Gilbert Scott. Likenesses of the Howard family are sculptured from photographic copies inside the church, and stop the label which surrounds the head of the windows.

DISSENTING CHURCH-BUILDING NEWS.

Sale.—The new Presbyterian Church, in Northenden-road, Sale, has been opened. The style is Early Decorated. The area of the church is 60 ft. in length by 40 ft. in breadth, with a gallery over the western entrance, in addition to a choir gallery, and there will be accommodation for 600 people. There is also a schoolroom, 45 ft. by 30 ft., with session-room, vestry, and other rooms. The total cost will be about 6,000*l.* Of this about one-half had been subscribed before the building was commenced. The architects are Messrs. Wilson & Oldham, of Manchester.

Earls Barton.—The corner-stone of a new Baptist chapel, at Earls Barton, has been laid. The plans for the chapel were prepared by Mr. Edward Sharman, of Wellingborough. The style adopted is of Gothic treatment. The exterior walls are built of Duston stone, with Bath stone finishings for windows and entrance, and the interior is partly lined with brick. The general exterior has the rugged appearance characteristic of the local stone, but the Bath stone finishings, which in the front will be somewhat carved, will relieve it from dulness. The roof is a pitched one, and inside is to be lined with varnished pine. There will be galleries on either side, and at the entrance end, the sittings of which, as well as those on the ground-floor, will be open. Altogether the chapel will seat about 280. For the preacher a rostrum, with canopy, will be provided, and underneath this, in front, is the baptistery. Hot air will be used for heating purposes. A preacher's vestry is provided at the side, and has entrances from without, and into the chapel. The building part of the work was given to Mr. Birkitt, of Wellingborough; the woodwork to Mr. Knight, of Earls Barton; and the plumbing, &c., to Mr. Simcoe, of Earls Barton, the contract being for 1,000*l.*, exclusive of the value of the materials of the old building. The chapel is so far completed that it was ready for the top corner-stone.

Henley.—The Wesleyan Chapel, the erection of which has just been completed, on the west side of Duke-street, has been opened for divine service. The chapel is in the Decorated Gothic style, and was commenced in July last, Messrs. Cattermole & Eade, of Ipswich, being the architects, and Mr. C. Clements, of Henley, the builder. The building is capable of seating about 160 persons, and the outlay, including the purchase of freehold site, amounts to 930*l.*

Preston.—A new Wesleyan Methodist chapel built of brick, with stone dressings, in Marsh-lane, Preston, has been opened. The building, which will accommodate 500 or 600 persons, including from 100 to 130 free seats, has a portico, supporting the north gallery, and four Corinthian columns. The total cost of the building and site will be about 3,500*l.*

Hartlepool.—The foundation-stone of a new chapel, for the New Connexion Methodists of West Hartlepool, has been laid by Mrs. Love, of Mount Beulah, Durham, the site of the new edifice being at Old Stranton. The estimated cost of the new building is about 2,600*l.*, inclusive of the site, and embracing both chapel and school accommodation, and covering an area of 108 ft. by 50 ft. The architect is Mr. Gibson Kyle, of Newcastle-on-Tyne, who designed the newly-erected Wesleyan edifice. The contractors are Messrs. Bridges & Robson, of Hartlepool; the brick and stone work being undertaken by Mr. W. Hall. Already 1,500*l.* of the required sum are subscribed for.

Gorton, Manchester.—A new Wesleyan chapel has been opened for divine service here. The chapel is built with local bricks, with bands and arches in coloured Staffordshire bricks, and dressings of light Darley Dale stone, in the Romanesque style of architecture. A gallery is carried round three sides of the chapel, with choir-gallery in the end, over the minister's large vestry. The pillars of the gallery are carried up to the roof, and the roof timbers are swept from the same in elliptical arches, dividing the roof into panels, the centre ones being ornamented with rosettes pierced for ventilation. All the internal woodwork is in pitch pine, varnished. The seating has leaning backs, book-boards, hat-rails, &c., and provides accommodation for 700 persons. The lighting is by coronas from the ceiling panels, and brackets under the galleries. The warming is by hot water, by Mr. R. R. Gibbs, of Liverpool. The new buildings are connected with the school, chapel, and vestries, built a few years since, and which are now adapted for Sunday-school purposes, with new offices, and yards for the children. The works have been carried out by Messrs. Henshall & Smith, builders, of Gorton, Manchester, from plans prepared by and under the superintendence of Mr. Alexander Lauder, of Barnstaple, architect.

Cleckheaton.—The foundation-stone of a new Congregational chapel, to be erected in Westgate, Cleckheaton, has been laid by Sir James Watts, of Manchester. A sum of over 4,000*l.* having been raised, a limited competition for designs was invited. Out of the plans sent in, those of Mr. H. J. Paull, of Manchester and London, were selected, and the contracts were let. The site has a frontage of 29 yards to the main road, and is bounded on either side by a street 11 yards wide. The surface falls rapidly from front to back, so that underneath the school-room, which is to be in the rear of the chapel, and on the same level as the chapel-floor, there will be a suite of class-rooms. The school premises have been specially arranged to suit both week-day and Sunday school requirements; and ample accommodation will be provided for eighty infants and 350 other children. Open playgrounds are placed on either side, between the streets and the school building, and connected therewith is to be a large covered space, measuring 250 superficial yards, and 10 ft. clear height, obtained under a portion of the chapel. This will be floored with fine gravel, and the ceiling will be boarded. The schoolroom is 59 ft. by 32 ft. wide, and 22 ft. high to the centre portion of the ceiling. At the end is a platform recess, and a private staircase for the use of committees at public meetings and for orchestra performers at concerts. The room will be lighted by windows on either side. Owing to the limited dimensions of the land, and the necessity for play-grounds to be attached to the school premises, the area at disposal for a large chapel was comparatively small, and this necessitated a special treatment in the design. The general arrangement may be described as a double nave, intersected by a continuous transept, the latter extending the full width of the site. Each nave is 25 ft. wide, and the width of the transept corresponds therewith. Three cast-iron columns suffice to carry the roof-timbers of the entire building, the area clear of the walls being 435 superficial yards. The pulpit will occupy a central position adjacent to one of these columns, and the ground-floor seats are arranged in a semicircle, the outer line

of which reaches the transept. End and side galleries are conveniently planned to suit the peculiar arrangement of the building, and two stone staircases are provided in the angles of the junctions of the naves and transepts. Another stone staircase, from one of the side galleries, leads down to the basement-floor of the school premises. The chapel will accommodate nearly 1,000 persons,—566 on the ground-floor, and 372 in the galleries. The ground-floor is arranged so as to give a large proportion of short pews, and there are four alleys in the total width of the naves. In the front is a continuous vestibule or corridor extending the whole width of the naves, and containing the outer and inner entrance doors. This has a slated roof and gabled doorways. Externally the chapel bespeaks the internal construction. The front elevation shows two gables, each containing a three-light traceried window; and at their juncture is a turret 8 ft. square projecting 3 ft. from the wall-face, and continued as an octagon above the roofs to a total height of 90 ft. from the ground. The upper portion of this turret will be of hewn stone throughout. The transept gables abutting upon the side streets contain a central window of two lights, with one-light window on either side of it, and all containing tracery in the upper part. A separate range of windows will light the ground-floor underneath the galleries. The style of the building is English Gothic of the geometrical period. The walls will be built of rubble stone, faced with square parpoints in regular courses of from 3 in. to 5 in. thick, and hewn stone for all the dressings. The roofs are to be slated, and the timbers exposed to view internally will be stained and varnished. The joiners' work throughout will be of pitch pine varnished. For warming the whole of the building, Messrs. Haden & Sons' combined system of warm air and hot water will be adopted; and it is intended to use Boyle's air-pump ventilators for extraction of foul air. The contracts have been taken as follows:—J. Drake & Son, Cleckheaton, masons' work, &c., 3,216*l.*; J. Fawcett & Sons, Huddersfield, joiners' work, 2,885*l.*; W. Watson, Leeds, slating, 256*l.*; Duckworth & Son, Bradford, plastering, 316*l.*; J. Brook & Co., Heckmondwike, plumbing and glazing, and gas-lighting, 618*l.*; J. Peel, Cleckheaton, painting, &c., 410*l.*; Haden & Sons, heating apparatus, 148*l.* 10*s.*; total 7,579*l.* 10*s.*

STAINED GLASS.

Pishill Church, Henley.—Messrs. Cox & Sons have lately placed in Pishill Church, near Henley, a small stained-glass window, of three lights, illustrative of the three parables, the Good Shepherd, the Good Samaritan, and the Return of the Prodigal Son. They are represented in simple groups in medallions, the remaining spaces being filled with grisaille work, broken up by coloured fillets, which serve to connect the subjects with the richly-coloured border that runs round the window.

Woodhorn Church. — Two windows have been placed in this church, by Mr. Robert Watson, in memory of his late brother. They are the work of Mr. Barnett, Victoria Stained Glass Works, Newcastle. The subjects are the Good Shepherd, and Cornelius the Centurion, with an angel above holding a scroll. A brass plate below the latter window bears an inscription, in black letters, with red initials.

Bramford Church. — This small church has recently been enriched by the addition of a stained-glass window, presented by Mrs. Mumford, of "The Gables." The window is at the west end of the north aisle. The architecture is Early English, with only the plain tracery of that style, in three lights. The design is by Mr. Samuel Evans, of West Smethwick, near Birmingham, and the work has been executed by Messrs. D. & E. Haggar, Ipswich. The subject is an illustration of the texts, "In the morning sow thy seed, and in the evening withhold not thine hand," "Sown in corruption; raised in incorruption."

St. John's, Middlesbrough.—Two new-stained glass windows have just been placed in this church, by Mr. J. Brewster. The subjects are Naaman dipping himself in Jordan, and the baptism of Cornelius, as being the Old Testament type and the New Testament fulfilment of Christian baptism. At the head of each light is a cross, to signify the cross which is marked upon the forehead of the baptized, in token of his admission into the Christian family. They are placed near to the font. The artists were Messrs. Lavers, Barraud, & Westlake, of London, who have supplied all the other windows in this church.

Gorleston Church, Great Yarmouth.—This old church, which has just been restored, has had placed in its south wall two stained-glass windows. The one immediately to the west of the priest's door is in memory of the late Mr. and Mrs. Bell, and is erected at the expense of their children. The subject represented in this window is "Dorcas and the good Samaritan." The next window, to the west of the Bell window, is in memory of the Whaites family, and has been erected by their relatives. The episode of Martha complaining to Jesus of Mary's devotion and Mary's early visit to the Sepulchre, are the subjects represented in this window. Besides the many coloured figures, the windows contain a cusped canopy in each pane above the figures. The triangular apex of each window contains an angel embowered with decorative glass. The windows are the make of Messrs. Hughes, of London, and were erected in the church by Mr. George Road, of Gorleston.

Harleston Church.—A painted window, has just been erected in this church, as a memorial, by Mr. Hazard, of Harleston, Norfolk. The subject represents "The Parable of the Good Samaritan." In the first of the three lights he finds the wounded man; in the second he is carrying him on his own beast; in the third, which has the brightness of morning, he is seen paying the innkeeper. The arch of the windows, as well as the quatrefoils in the tracery openings, is ornamented with flowers, vine-leaves, and grapes. The work is from the studio of Messrs. O'Connor & Taylor, of London.

St. Mark's, Holbeach.—This church has been ornamented with stained glass. The windows are placed in the five openings of the apse, the centre representing "Christ bearing the Cross," the four Evangelists completing the number. They have been furnished by private subscription, under the superintendence of the vicar, the Rev. J. H. Jowitt, and are the work of Messrs. O'Connor & Taylor, of London.

Full Sutton Church, near Stamford Bridge.—A memorial window has been erected in the east end of this church. It is composed of three lights, with quatrefoil tracery. In the centre one is a representation of our Lord upon the Cross, surrounded by an aureola, the background of the panel being composed of cherubim of varied tints of ruby. At the base of this panel is a smaller quatrefoil, with the pelican and young in it. In the side lights are the figures of the Virgin Mary and St. John, under canopies of the Perpendicular style, with bases of canopy work with foliage ornament of the same character, this style of glass-painting being adopted throughout the window. The tracery-pieces are filled with angels veiling their faces. The work is from the studio of Mr. J. W. Knowles, York.

Miscellanea.

An Artist Farmer, Modelling in Butter. The *Cincinnati Commercial* says:—

"There is now in this city a unique work of art,—the 'Dreaming Iolanthe,'—'a study in butter,' by Mrs. Caroline S. Brooks, a daughter of the late Abel Shawk, of Cincinnati. A few months ago, while living on a farm near Helena, Arkansas, Mrs. Brooks began to sculpture faces in the butter she made with her own hands, doing it to ornament the pats she prepared for market. The only implements at her hand were a common butter-paddle, cedar sticks, broom straws, and a camel's-hair pencil. The faces that sprang into relief under the touch of these rude tools possessed a singular charm for the farmer's wife, and she laboured over them with patient delight. Her faces in butter became the marvel of her neighbourhood. Then one of them was exhibited at Memphis, and the best judges of art there were greatly surprised by its excellence and originality. Mrs. Brooks continued to remodel her ideal, and found a subject in 'The Dreaming Iolanthe.' She discovered this character in a translation of 'King Rene's Daughter,' a poetical drama by the Danish poet, Henry Hertz. The bust, which is somewhat less than life-size, is in high relief in the concavity of a large tin-pan. The butter is almost white. Its translucence gives to the complexion a richness beyond alabaster, and a softness and smoothness which are very striking. The hair ripples back in waves, and the lips are parted with a heavenly smile. The harmony of the face is exquisite. The ear is quite a marvel of delicate manipulation. In the absence of all technical knowledge of art, Mrs. Brooks has succeeded in creating a face that may make her famous. Artists say that, in spite of the mobility of the model, a cast can be taken of it."

Civil and Mechanical Engineers' Society. On April 8th a lecture will be given by Mr. G. W. Usill, on "Setting out Bridges and Viaducts." All engineering students, we are asked to say, will be welcomed.

A Village embedded in Ice.—A despatch from Halifax, Nova Scotia, dated March 10, says,—Immense damage has been done in Sherbrooke, Guysborough County, about ninety miles from this place, by a freshet. A couple of miles above Sherbrooke there is a natural dam of rocks across the river. The ice on this portion of the river broke up in consequence of the freshet, and flooded the whole of the valley. The flood brought down thousands of tons of ice and great numbers of logs. The solid ice below the village remained firm, and Sherbrooke stands behind a boiling sea. Every house was flooded. Many families abandoned their houses, while others took refuge in the upper stories. Two bridges in the village, and a large bridge over St. Mary's river, are gone. The day after the flood the mountains of ice, and the logs, trees, and other rubbish became frozen solid, so that the village is now embedded in a frozen sea. The ruin is indescribable; it extends a mile and a half in length by a mile in breadth. In the event of a sudden thaw the village will be quite destroyed.

The Recent Extraordinarily High Tide. The unusually high tide of Friday week caused considerable damage to property and even loss of life in different parts of the country where tidal waters flow. Great havoc has been caused on the low-lying coast of Essex. On the Blackwater and the Crouch, especially, the water rose to a height previously unknown. At Maldon, Heybridge, and Latchingdon the damage is reckoned at many thousands of pounds. Ipswich, Yarmouth, Hull, and various other large towns on the east coast were partially flooded. The unusually high tide was observed likewise in the estuaries of the great rivers of Germany—noticeably at Bremen and Hamburg. The Elbe rose very rapidly, from 17¼ ft. over low-water mark to 18 ft. The subject was brought under the notice of the Metropolitan Board of Works at their last meeting with reference to the low-lying districts of London near the river, and the chief engineer was directed to consider the subject, and report to the works committee.

The Factory Labour of Women and Children.—A deputation of members of Parliament and representatives of factory workers has waited upon Mr. Cross, the Home Secretary, urging upon the Government either to support Mr. Mundella's Bill, or bring in a measure of their own, for the reduction of the hours of labour of women and children in factories to 54 hours a week or nine hours per day. Mr. Mundella, M.P., introduced the deputation. The hardship of women and children working longer hours than men, almost regardless of the delicate health, particularly of the former, and the desire of many women operatives that the law should be altered, were among the principal points urged, on the grounds of humanity, in favour of a nine hours Bill. Mr. Cross, in reply, said he sincerely hoped, before long, to see the legislation relating to factories, at all events, taken out of its present complicated condition.

The Royal Commission on Labour.—The Royal Commission appointed to inquire into the operation of the Criminal Law Amendment Act, and the other Acts specially affecting trade unionists has held its first sitting at the Westminster Palace Hotel, when the whole of the members were present, including Mr. Thomas Hughes and Mr. Macdonald, M.P. The business transacted was of a formal character. It is stated that Sir A. Cockburn, the Lord Chief Justice, was appointed chairman, and Mr. Francis Bacon secretary. It is also understood that the rules adopted by the late Trade Unions Commission, will be followed, and that the proceedings will not be open to the general public.——The Parliamentary Committee have elected Mr. Bailey, president of the Amalgamated Tailors' Society, as its chairman, in the place of Mr. Macdonald, M.P., resigned.

Roof "Raising."—At St. Jude's Schools, Upper Chelsea, the main roof, measuring about 27 yards one way and 10 yards the other, covered with slates, lined internally with plaster, and containing several skylights, has been lifted by Mr. J. High, under the direction of the architect, Mr. E. H. Lingen Barker. After being poised for several weeks mid-air, during sundry gales, on the fine points of a few ordinary screw-jacks, whilst a lofty story was in course of erection beneath, it was finally lowered and fixed in its raised position, no disturbance of the slates or cracking of the plaster or glass having occurred.

Antiquarian Discovery.—At a recent meeting of the Croydon Local Board of Health the Chairman announced that some workmen in the employ of the Board while digging for gravel on the Irrigation-farm of Beddington, had discovered the remains of a Roman warrior, who had evidently been buried in his armour, with arms. Some time ago the remains of a Roman villa were found in the same neighbourhood, and a number of coins, Roman and British, between Croydon and Norwood. It may be mentioned that the locality in which this discovery has been made is rich in archæological remains. Distinct traces have been found of "hut circles" in the fields south-east of Woodcote and near Wallington Manor-house, and it is supposed that the Roman town of Noviomagus occupied the southern portion of the parish.

Dublin Main Drainage.—Of the tenders received for the execution of these works (a list of which we give), the lowest is 428,000*l.*, exclusive of the machinery for pumping, &c., at the outfall, and which will not cost less than 50,000*l.*, so that in round numbers the main drainage works will not cost less than 500,000*l.* Now the population of Dublin is 245,000, while fully one-fifth are too poor to bear any portion of sewer-rates; consequently the remaining portion must be taxed at the rate of from 50s. to 60s. per head, including men, women, and children, to make up the required amount. Whether it will be possible for the Corporation to carry out the works at such a cost remains to be seen, but considerable opposition is expected from the ratepayers of the city.

Bristol Blind Asylum Chapel. — The chapel connected with the Bristol Blind Asylum, erected about the year 1837 from the designs of Rickman, has been altered internally under the advice of Mr. Henry Masters, architect. The seats have been made uniform. The pulpit arrangement has been altered so that the preacher faces all the congregation instead of having to preach to two groups of hearers, as heretofore. The walls, ceilings, and windows have been painted, and the carving gilded, the gas brackets removed, and centre coronas substituted. The contractors who have been engaged upon the works are,—carpenters and joiners, Messrs. Eastabrook & Sons, of Stapleton-road; painters and decorators, Messrs. Lewis & Sons, of Clifton; gas work, Mr. Henry Harris, of Lower Castle-street.

The Disposal of Sewage.—The Master of the Rolls has given judgment in two suits relating to the disposal of the sewage of the Enfield district. Mr. Harrison, the proprietor of a farm at Edmonton, undertook to dispose of all the sewage which should be delivered by the Local Board; but he now complained that they were supplying him with a worthless mixture of sewage and water in such quantities as to drown his land, and prayed that they might be compelled to execute the necessary works to keep the subsoil water out of the sewers. The Local Board, on the other hand, sought to obtain a specific performance of the contract. His Honour said the Court could grant no relief to either party, and dismissed both bills, with costs.

Prosser's Adjustable Spreading Nozzle.—These nozzles, which are now coming into use, give means for the more extended application of water to the extinction of fires. The nozzle consists principally of a jet, suitably formed to deliver a solid stream of water, as in the case of the ordinary nozzle, so long as a solid stream is required, but when it is desirable that the water shall be spread, a slight turn of the wrist will cause a number of metal fingers to enter the stream, the effect of which is to break up the jet of water into a number of smaller streams, and so to spread the water. Amongst other advantages this disperses the smoke, and allows the operator to approach the seat of the fire. The nozzle will be useful, too, for watering streets.

Sale of Building Land in Bristol.—Messrs Alexander & Daniel offered for sale by public competition about 2 acres 12 perches of building land, situate near Bristol, in lots, on freehold ground-rents:—Lot 1, a plot of ground with a frontage of 33 ft. to the road from Westbury to Henbury, and with a depth of 200 ft., 2*l.* 18*s.*; lot 2, a plot adjoining, with a frontage of 33 ft. and depth of 182 ft., 3*l.* 3*s.*; lot 3, a plot with a frontage of 33 ft., and depth of 170 ft., 2*l.* 14*s.*; lot 4, with a frontage of 30 ft., and depth of 142 ft., 3*l.*; and so on, the lots mostly ranging between 2*l.* and 3*l.*

Whitby.;—The Archbishop of York has laid the foundation-stone of a new Church of England elementary week-day school in Fishburn Park, Whitby. His Grace was accompanied by a large gathering of the clergy, gentry, churchwardens, &c. Both the Privy Council and the National Society have given grants towards the building fund, but the remainder of the money has been raised by voluntary subscriptions. The schools are designed to accommodate 500 children, girls and boys, and will have all proper conveniences, such as class and recreation rooms, playgrounds, out-offices, &c. The total cost is nearly 2,000*l.* The architect is Mr. E. H. Smales, of Whitby; and the contractor, Mr. W. Langdale, of the same place. The building will be in the Gothic style of architecture, rather freely treated.

Ventilation of a Grand Jury Room.—At the Monmouthshire Quarter Sessions in Usk Town-hall, the foreman of the grand jury, addressing the chairman, said the grand jury objected to sit longer in the room in which they had been placed. Could anything be done in order to give ventilation to the court? It was like a hothouse. "If we open the window from the bottom, we cannot sit there. Will the Court give us permission to break a pane of glass in the upper part of the window? The Chairman: Yes."—The foreman of the grand jury then retired, and in a few minutes a smash of glass was heard. The foreman afterwards said he hoped the Court would not be afflicted with such a place as the Usk Town-hall very long.

The Social Science Congress in Glasgow.—A meeting for the purpose of making arrangements for the reception of the National Association for the Promotion of Social Science in October next has been held in Glasgow. Representatives from all the scientific institutions in the city and neighbourhood were present. Dr. Ryall, secretary of the association, addressed the meeting at considerable length, explaining the arrangements which it would be necessary to make. Committees were appointed to carry out the necessary arrangements. Dr. Lyon Playfair, it appears, has accepted the post of President of the Health Department of the Congress.

The New Government Offices.—Mr. Goldsmid asked in the Commons whether the space now enclosed by a hoarding in front of the new buildings will be thrown into Parliament-street. Lord H. Lennox said the matter had been carefully considered by both his predecessors. A certain portion of the ground had been reserved under his directions and those of Captain Galton, and under the special sanction of Sir Gilbert Scott; but orders had been given to the workmen, and he hoped that in the course of four or five weeks 45 ft. or 50 ft. extra would be added to the roadway.

Archæological Remains at the Sea of Marmora.—A portion of a marble column, ornamented in bas-relief with figures of men and horses, has been discovered on the shores of the Sea of Marmora, and is believed to have formed part of the Arcadius Column, which remained standing more than 200 years after the taking of Constantinople by the Turks, and was not discovered till after the seventeenth century. The entire surface from the base to the capital was ornamented with bas-reliefs of victories of Theodosius the Great, while the interior was pierced with a winding-staircase, which gave access to the summit.

A Royal Residence in Ireland.—A Dublin correspondent of the *Pall Mall Gazette* writes:—"Rumours very generally prevail in Dublin that the Government contemplate certain 'concessions' to Ireland, of a social rather than a political nature. The erection of a Royal residence near Dublin, and the substitution of a Royal prince and a yearly Court on a regal scale for the Viceroy are among the projects with which the Ministry are credited. It is said in some quarters that contracts are already being sought for alterations to the Viceregal Lodge in the Phœnix Park, which will cost 30,000*l.*

The Society of Arts and the Brighton Aquarium.—Arrangements have been made for a large party of the members of the Society of Arts and their families to pay a visit to the Brighton Aquarium during the Easter holidays, under the guidance of Mr. Frank Buckland, her Majesty's Inspector of Salmon Fisheries, who will deliver a lecture adapted to the juvenile portion of the party. A special train is engaged for the excursion.

Leicester Square.—An application has been made before Vice-Chancellor Hall, on behalf of Scaife and Others v. Grant, for an injunction to restrain the defendant, Mr. Albert Grant, M.P., from proceeding with the Leicester-square gardens, so far as such works are or may amount to a breach of the covenant subject to which the plaintiff and others, together with the defendant, are owners or tenants in common. At the request of the Solicitor-General, who appeared for the defendant, the application was ordered to stand over to the second motion day on Easter Term.

Loan Exhibition of Art at Milan. — Some of the most prominent residents of Milan have lately proposed to exhibit, in the great hall of the public gardens, all the objects of art which private persons may be willing to lend for the purpose. To this show the houses of Trivulzio, Borromeo, Trotti, Cagnola, Poldi, Sola, and many others will contribute. Besides these private collections other cities, churches, and the Government have promised to contribute their share. It is intended to open it in May next.

Improvements in the Parks.—Considerable improvements are being carried out both in the Green and Hyde Parks. In the former the entire length of walks has been coated with a covering of white shell gravel. Numerous additional flower-beds are being constructed. In Hyde Park the Row has been relaid with bright red sand and gravel, the walks are renewed, additional shrubberies are being constructed, and flower-beds laid out. The island in the Serpentine has proved a success.

Fall from the Summit of Holt Castle Ruins.—A Chester lady, Miss Griffiths, accompanied by Mr. Preece Jones, of Chester, visited the ruins of Holt Castle, and whilst standing on the highest point of the battlements, the stone work or soil gave way under the lady, and she was precipitated, unobserved, into the rocky moat below. She was found lying insensible on the ground, and on recovering complained of being sadly hurt, but it is said no bones were broken.

English Engineers in Russia. — Mr. Alfred Edward Garwood, C.E., son of the late Alderman Garwood, of Arundel, has been appointed Chief Engineer and Locomotive Superintendent to the Losova and Sebastopol railway in Russia. Mr. Garwood was formerly superintendent of the Kolomna ironworks, near Moscow, and constructed the first locomotive engine that was made in Russia.

School Building in Scotland.—Sir R. Anstruther has given notice in the Commons that on going into committee of supply on the 17th April, he will call attention to the restrictions enforced by the Committee of Council of Education as to the internal arrangements of schools proposed to be built in Scotland, and to submit a resolution.

Aldershott Brick Works.—At the first general meeting of the Aldershott Brick and Tile Works Company, held on Saturday last, a dividend at the rate of 6 per cent. per annum was declared; the trade for the year ending 31st December, 1873, showing an increase of 75 per cent. over that of the year 1872.

Landseer's Lions.—Our endeavour to draw the attention of those in power to the state of these bronzes has been successful. Lord Henry Lennox, the First Commissioner of Works, has commissioned Dr. Percy, of the Ventilating Department of the House of Commons, to examine and report on their condition.

Fall of a Race-stand at Lincoln.—Great alarm and excitement were caused on the Lincoln Race-course on Tuesday in last week by the falling of a temporary timber stand erected in the ring under the direction of the Race Committee. Several persons were injured.

Street Names on Lamps.—The Committee of Works of the Clerkenwell Vestry have recommended that the names of streets should be painted on fifty street-lamps as an experiment, in the neighbourhood of the Angel and St. John-street-road.

St. Paul's.—Messrs. H. & R. P. suggest that the steam jet might be usefully employed to cleanse the exterior of the Cathedral. We are not so sure about this.

TENDERS

For the erection of a residence at Codsall, near Wolverhampton. Mr. J. B. Veall, architect :—

Horsman	£550	0	0
Moreton	504	0	0
Thompson	500	0	0
Cockerill (accepted)	492	0	0

For additions to winding engine-house and setting new boilers at the Conduit Colliery, Norton. Mr. J. B. Veall, architect :—

Higham (accepted)	£618	4	6

For alterations and additions to Nos. 220 and 222, Great Portland-street, for Mr. Adam Pensom. Mr. Thomas Durrans, architect :—

Robertson	£695	7	5
Botting	685	0	0
Berridge	669	0	0
Adams	644	2	6
Cairns	638	0	0
Higgs	616	10	0

For painting, &c., the external work at "Northumberland House," Green-lanes, Stoke Newington :—

Lewis	£176	10	11
Greening	105	0	0
Baldwin	82	10	0

For building retaining-wall, embanking, forming roadway, curbing, channelling, and forming footways in approach from Hope-road to the Esplanade, Shanklin, for the Shanklin Local Board. Mr. F. Newman, engineer :—

Coker	£1,520	0	0
Sanders	1,130	0	0
Thirst	1,048	0	0

For constructing timber platform and building offices and waiting-rooms at the Pontoon, Fountain Quay, West Cowes, for the Southampton, Isle of Wight, and South of England Royal Mail Steampacket Company. Mr. Francis Newman, architect :—

Thomas	£2,307	0	0
Sibley	2,237	0	0
Ball	2,100	0	0
Barton	1,998	0	0
Meader	1,984	0	0
Langdon (accepted)	1,933	0	0

For schools, Gloucester-road, Lambeth, for the London School Board. Quantities supplied :—

Ennor	£11,567	0	0
Patman & Fotheringham	11,568	0	0
Manley & Rogers	11,227	0	0
Staines & Sons	11,186	0	0
Glover	10,975	0	0
Dove, Bros.	10,970	0	0
Perry, Bros.	10,816	0	0
Roberts	10,720	0	0
Browne & Robinson	10,598	0	0
Sewell & Sons	10,469	0	0
Scrivener & White	10,434	0	0
Jerrard	10,264	0	0
Hill, Higgs, & Hill	10,240	0	0

For Schools for the London School Board, Penrose-street, Lambeth Division. Quantities supplied :—

Gammon & Sons	£9,137	0	0
Killby	8,800	0	0
Thompson	8,360	0	0
Tarrant	8,237	0	0
Sheffield	8,175	0	0
Jerrard	8,093	0	0
Callum	7,640	0	0
Cooper	7,544	0	0

For the construction of vaults, house-drains, carriageway, and footways, Wornington-road, Westbourne Park, for the Land and House Investment Society. Mr. J. Houle, architect. Quantities supplied by Mr. Nichols :—

Riley	£2,320	0	0
Ennor	2,218	0	0
Gardner	2,178	0	0
Crockett	2,130	0	0
Raby	2,098	0	0
Blight	1,900	0	0

For new shop-front and fittings at 224, High Holborn, for Mr. T. Bowles. Mr. Owen Lewis, architect :—

Blandford & Jones (accepted)	£150	0	0

For repairs to the undermentioned houses. Mr. H. J. Newton, architect :—

Cottenham Arms Public-house, Holloway :—

Channing	£99	0	0
Searle	93	0	0
Shurmur (accepted)	72	0	0

Chapel House Public-house, Islington :—

Taylor	£113	0	0
Shurmur	108	0	0
Hockley (accepted)	103	0	0

Rainbow Tavern, Islington :—

Taylor	£91	0	0
Hockley	87	0	0
Shurmur	81	0	0
Brindle (accepted)	64	10	0

For Dublin main drainage :—

Pearson & Co.	£526,000	0	0
Webster & Co.	509,000	0	0
Pickerings & Co.	493,000	0	0
Doherty & Co.	480,000	0	0
Newall & Robson	466,000	0	0
Mackay & Co.	435,000	0	0
Smith, Finlayson, & Co.	428,000	0	0

J. & J. Williams, No. 2 Contract, £183,000; No. 3, £153,000 *only*.

For two pairs of villa residences, Lordship-lane, East Dulwich. Mr. Thos. Clarke, architect :—

Upson & Kisdale	£1,154	0	0
Tuel	1,227	0	0
Mills	1,250	0	0
Martin	1,334	0	0
Turner	1,445	0	0
Taylor & Parsons (too late)	1,515	0	0

For stabling for fifteen horses (exclusive of Mount Sorrel paving) in the Stone-yard, Battersea, for the Board of Works for the Wandsworth District. (Credit allowed for present old stabling for six horses.) Mr. P. Murfin (acting surveyor), architect :—

Eastman	£509	0	0
Baker	500	0	0
Thornton	385	0	0
King (accepted)	330	10	0

For additions to Havenfield Lodge, Great Missenden, Bucks. Mr. Arthur Vernon, architect :—

King & Co.	£1,175	12	0
Barnard	1,130	10	0
Spicer	1,052	0	0
Snell	1,041	0	0
Berry	1,004	9	0
Senior & Holland	990	0	0
Johnson	970	0	0
Hunt (accepted as to part)	796	0	0

For alterations and repairs to the Green Man Tavern, Euston-road, for Mr. J. T. Smith. Messrs. Bird & Walters, architects :—

		Less if bands and bases in Portland stone.		Less if in Red Mansfield.	
Gould & Brand	£1,496	£80		£73	0
Williams & Son	1,387	55		40	0
Thompson & Smith	1,315	40		30	0
Mark	1,288	38		30	0
Botting	1,257	58		50	0
M'Lachlan	1,229	30		20	0
Brown	1,217	72		67	10
Newman & Mann	1,185	65		45	0
Anley	1,147	37		26	0

TO CORRESPONDENTS.

Erratum.—The engineer to the Northumberland Graving Docks, Millwall, is Mr. E. C. Homer—not Horner, as printed.

T. C. H.—T. B.—H. S.—C. F. H.—G. M.—R. S.—M. G.—Mr. V.—G. M.—T. D.—A. T. (not received).—R. P. S.—W. H.—A. V.—P. M.—M. J. F.—A. G.—F. N.—S. J.—M. & Son.—W. R.—E. S.—T. R. S. (next week).—H. B. (ditto).—L. L. (ditto).

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